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ABSTRACT

Projects are in-depth studies of a topic undertaken by a class, a group, or an individual child. Projects are intended to strengthen children's dispositions to be interested, absorbed, and involved in in-depth observation, investigation, and representation of worthwhile phenomena in their own environments. This Catalog on the Project Approach, the third of its kind, describes and illustrates projects done by children in early childhood and elementary classrooms on topics such as dogs, musical instruments, hens, bicycles, birds, grocery stores, restaurants, and books. Section 1 of the Catalog provides a brief overview of what a project is and offers some suggestions about how to get started. This section also discusses how young children's emerging mapping skills can be strengthened through project work. Section 2 describes some of the strategies used to help teachers and student teachers learn to use the Project Approach. A variety of course structures and support group arrangements are described, and the important role of administrators in supporting teachers' efforts is discussed. The findings of a survey of teachers using the Project Approach are also summarized. Section 3 offers examples of Project Approach efforts that can be accessed on the World Wide Web. Section 4 consists of the summaries of 17 projects, and the Catalog's final section, "Resources for Implementing the Project Approach," includes ERIC Digests, a glossary,

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# The Project Approach Catalog 3

by the
Project Approach Study Group

Edited by Judy Harris Helm

Prepared for The Project Approach: An Evening of Shared Knowledge
National Association for the Education of Young Children Annual Meeting
November 10, 2000

ERIC Clearinghouse on Elementary and Early Childhood Education
University of Illinois at Urbana-Champaign

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# Foreword: Project Approach Study Group Catalog

**Lilian G. Katz**
University of Illinois at Urbana-Champaign

This catalog accompanies the Project Approach Study Group's presentation at the year 2000 annual meeting of the National Association for the Education of Young Children (NAEYC) in Atlanta, Georgia. As in the previous two catalogs, published in 1996 and 1998, the project summaries in this issue reflect the range of locations, settings in which Study Group members work, and the variety of age groups and mixes and project topics members have used. In addition to summaries of the 17 projects displayed at the conference, the catalog includes four sections that address a variety of issues of concern to all involved in implementing the Project Approach.

Section 1 provides a brief overview of what a project is and offers some suggestions about how to get started. It includes also how young children's emerging mapping skills can be strengthened during project work.

Section 2 describes some of the strategies used to help teachers and student teachers learn to use the Project Approach. A variety of course structures and support group arrangements are described, and the important role of administrators in supporting teachers' efforts is discussed. The results of a survey of teachers using the Project Approach is also summarized.

Section 3 offers examples of Project Approach efforts that can be accessed on the World Wide Web. Section 4 consists of the summaries of the 17 projects displayed at the conference showing how preschool and primary school children can become deeply engaged in investigating a variety of phenomena in their own environments, and Section 5 lists a range of resources that can support teachers as they incorporate project work into their teaching.

We welcome your comments and suggestions for the next catalog, and look forward to hearing about your experiences of using the Project Approach.

## *Section 1*

## The Project Approach

# The Project Approach in Action

**Sylvia C. Chard**
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Projects, like good stories, have a beginning, a middle, and an end. This temporal structure helps the teacher to organize the progression of activities according to the development of the children's interests and personal involvement with the topic of study.

During the preliminary planning stage, the teacher selects the topic of study (based on the children's interests, the curriculum, the availability of local resources, etc.). The teacher also brainstorms her own experience, knowledge, and ideas and represents them in a topic web. This web will be added to throughout the project and used for recording the progress of the project.

## Phase 1: Beginning the Project

The teacher holds discussions with the children to find out what experiences they have had with the topic and what they already know about it. The children represent their experiences and show their understanding of the concepts involved in explaining them. The teacher helps the children develop questions that their investigation will answer. A letter about the study is sent home to parents. The teacher encourages the parents to talk with their children about the topic and to share any relevant special expertise.

## Phase 2: Developing the Project

Opportunities for the children to do fieldwork and speak to experts are arranged. The teacher provides resources to help the children with their investigations: real objects, books, and other research materials are gathered. The teacher suggests ways for children to carry out a variety of investigations. Each child is involved in representing what he or she is learning, and each child can work at his or her own level in terms of basic skills, constructions, drawing, music, and dramatic play. The teacher enables the children to be aware of all the different work being done through class or group discussion and display. The topic web designed earlier provides a shorthand means of documenting the progress of the project.

## Phase 3: Concluding the Project

The teacher arranges a culminating event through which the children share with others what they have learned. The children can be helped to tell the story of their project by featuring its highlights for other classes, the principal, and the parents. The teacher helps the children to select material to share and, in so doing, involves them purposefully in reviewing and evaluating the whole project. The teacher also offers the children imaginative ways of personalizing their new knowledge through art, stories, and drama. Finally, the teacher uses children's ideas and interests to make a meaningful transition between the project being concluded and the topic of study in the next project.

This summary explains some of the common features of projects, but each project is also unique. The teacher, the children, the topic, and the location of the school all contribute to the distinctiveness of each project.

# Getting a First Project Started with Young Children

**Judy Harris Helm**
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## Young Children and the Project Approach

Projects provide many learning experiences that benefit the young child. Through projects, children pose questions to be answered or take the initiative for investigation. Projects provide opportunities for the growth of knowledge, skills, and dispositions when children ask their own questions, conduct their own investigations, and make decisions about their activities. Projects provide experiences that involve students intellectually. They provide contexts in which children's curiosity can be expressed purposefully, and they enable children to experience the joy of self-motivated learning. Well-developed projects engage children's minds and emotions and become adventures that teachers and children embark upon together.

Projects are especially valuable for children in the early years because this is a period of rapid intellectual growth that can have important long-term consequences. The pre-kindergarten, kindergarten, and first-grade years are recognized as key years for the development of communicative competence, including language and understanding of symbol systems. In the preschool years, children begin to develop competencies in many areas such as representation, categorizing, and problem solving. These competencies continue to develop during kindergarten and first grade. In addition, a variety of skills related to competence in literacy begin to emerge during the kindergarten and first-grade years. An understanding of the importance and usefulness of numerical concepts and skills develops, and children begin to learn about scientific inquiry.

Projects with young children, however, present challenges to teachers who are facilitating the projects in their classrooms. Starting a first project in a classroom of young children appears to be especially intimidating to some teachers. Yet many teachers do use the Project Approach in classrooms of very young children. The term "young investigators" is used to describe these children who are 3 through 6 years of age and have not yet mastered reading and writing skills yet are engaged in in-depth investigation of a topic of interest. Projects with young investigators occur routinely in many preschools, child care centers, early intervention programs such as Head Start, and kindergarten and first-grade classrooms.

## Challenges and Opportunities

One of the challenges to doing projects with young investigators is the limited number of experiences in common for the group. Young children, by the nature of their age, have had fewer experiences than older children. For example, a 3-year-old is less likely to have been to the zoo than a 10-year-old. Even when young children have had common experiences, they are less likely to be able to discuss or represent that experience. For example, a 3-year-old who is interested in investigating caterpillars may not be able to remember having seen a caterpillar just 6 months earlier when she was 2 years old. Even if she remembers it, she may not have vocabulary to talk about it.

Projects are most successful when children have had enough experience with a topic that they can formulate meaningful questions and talk about the topic with peers. This requires that most of the children in a classroom have some common understanding of a topic. Compared with children of elementary school age, young children in a preschool classroom are not only less likely to have memories or to talk about their experiences with a topic, but they are also less likely to have had experiences in common. For example, the chances that a majority of children in a classroom of 10-year-olds have been to the zoo, can remember the trip, and discuss it are much greater than they would be in a classroom of 3-year-olds.

There are also specific skills that make project work easier. These skills include language skills such as forming and asking questions, listening to other children's thoughts, or expressing their own thoughts. These skills are just beginning to develop in the preschool child. Young children are also just beginning to use representation skills such as drawing, writing, painting, and musical expression, which are an important part of project work.

These developmental characteristics of young children can create challenges for teachers who wish to implement the Project Approach. However, slight modification of the Project Approach process can enable teachers to not only meet these challenges but also to maximize the unique nature of projects to benefit the young child.

## Exploring a Topic

One of the biggest differences in projects with young children is how the project begins. Figure 1 is a flowchart of the first phase of a project with young children. In phase one, project topics emerge similarly with young children and older children. The teacher may initiate some topics, and other topics may emerge from children's interest. One of the teacher's tasks early in a project with young children is to identify the young investigator's current and emerging interests as well as to consider what new interests they might be ready to acquire. Teachers should not hesitate to encourage children to acquire new interests.

After a topic emerges, teachers do some anticipatory planning to see if the topic holds promise for incorporating some of the developmental tasks for children of this age level. Teachers may also begin to think of the practicality of the topic as a project, looking at such considerations as the availability of field sites and visitors or the availability of concrete objects to study. During this part of the Project Approach cycle, teachers of older children might spend time talking about memories and having children represent what they know. The teacher of young children will instead provide activities that create common experiences and memories for the children. These are called focusing activities. These activities may include reading books, doing a first field site visit, setting up a play area related to the topic in the room, or bringing in an expert. These focusing activities are more teacher-directed in classes of young children than in classrooms of older children. They enable children to develop a beginning vocabulary so that they can talk about a topic and ask questions. At this point, the project experience looks more like a thematic unit with the teacher providing the experiences and resources. This time period in phase one with young children is sometimes called "messing around with a topic."

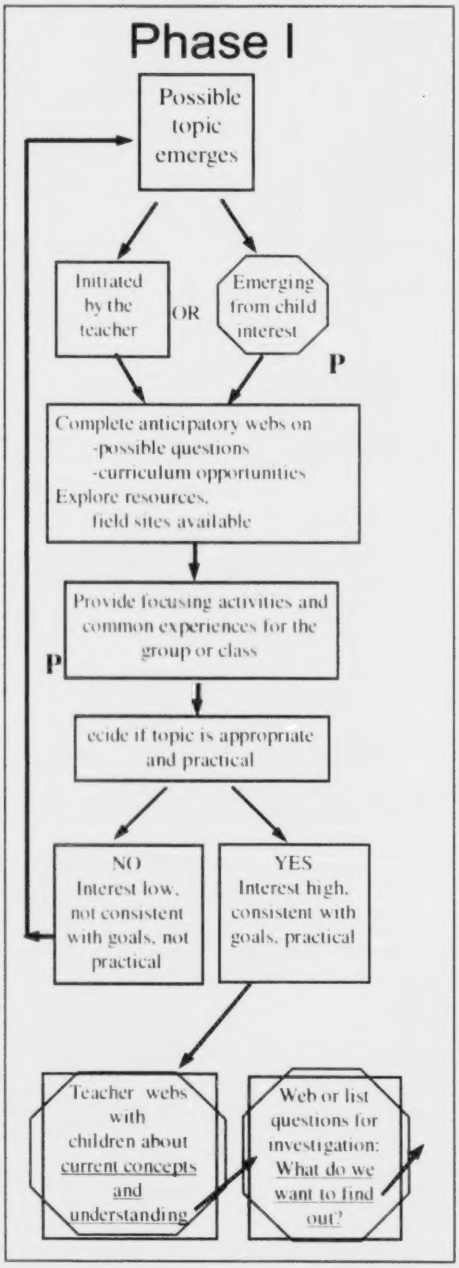

Phase I
Possible topic emerges
Initiated by the teacher
OR
Emerging from child interest
P
Complete anticipatory webs on
-possible questions
-curriculum opportunities
Explore resources,
field sites available
Provide focusing activities and common experiences for the group or class
P
ecide if topic is appropriate and practical
NO
Interest low, not consistent with goals, not practical
YES
Interest high, consistent with goals, practical
Teacher webs with children about current concepts and understanding
Web or list questions for investigation: What do we want to find out?

Figure 1. Phase one of a project. (**P** = Parent Involvement Opportunity; material in rectangles = Teacher Activity; material in hexagons = Child Activity; material in hexagons and rectangles = Teacher and Child Activity.)

During this time, the teacher does extensive observation of children's interest and enthusiasm about the topic. Young investigators may demonstrate this interest for the teacher by asking questions or requesting more information on the topic. With younger children, who may have limited verbal skills and vocabulary related to a topic, the teacher can look for expressions of interest through their behavior, perhaps by observing their spontaneous play. Three-year-olds will push forward for a closer view of an item that interests them. They often pick up items, or hoard "souvenirs" of experiences such as objects collected on a class walk. The very young child also signals interest by extending the typical length of time spent focusing on objects or listening to conversations. Young investigators, who are interested in a topic, even though very young, often attend closely to what other children say and think as well as listen to the teacher. If the interest of the children grows or remains at a high level and if the teacher's preliminary investigations indicate the topic is practical for a project, the topic may be selected as a project. If, however, interest has begun to wane or the teacher decides the topic is not likely to result in benefits that warrant the amount of time a project will take, the topic may be dropped and the teacher waits for a new topic to emerge or initiates a new topic. This period of time in which topics are explored can still be valuable learning time for children. All topics do not make good projects; however, they may be good topics for reading about or exploring in other ways. In a classroom of young children, a number of topics may come and go before a project topic takes hold.

### Formulating Questions

Near the end of phase one, after a topic emerges as a viable topic, the teacher can help the children record in a meaningful way (web, list, or chart) what they know about the topic. Sometimes teachers who are new to projects hesitate to use webs because they feel that young children cannot read words and do not understand the relationships represented by the connecting lines. However, experienced project teachers report that young children seem to understand and respond to webs more readily than to lists. The process of having their words written down appears to be understandable to many 3-year-olds. Adding drawings or photos to the web assists the youngest children in connecting the written representation with their words and the words of the other children. Many 4-year-olds are actually able to explain the relationships between words when the teacher connects them on the web and are also often able to recognize the words. The key to success in making webs with young investigators is in the preparation and support given to the children during the first webbing experience and the care taken to be sure that children have enough prior knowledge of the topic to relate to the web in meaningful ways.

Young investigators can then formulate questions about what they want to know. With older 4-year-olds and 5- and 6-year-olds, questions often come quickly and naturally, and the teacher records a list of questions that serves as the bases of the investigation. With younger children, however, asking what the child wants to know often results in the telling of a story instead. The teacher can help the youngest investigators develop questions by carefully tuning in to the child's interest and framing some of the children's thoughts into questions:

> "Is that something you would like to know about?"
> "Would you like to know how to use that?"
> "I am wondering about . . .? What do you think?"

Some teachers ask these question while children are looking at photos or drawings related to the topic. At this point, teachers might also use the technique of beginning a question and letting the children fill in the rest:

"Where is . . .?"
"Who . . .?"
"What is . . .?"

Sometimes the teacher may also deliberately provoke thought by introducing an artifact and discussing it with the children:

"What do you suppose this is for?"
"How do you think this might fit with this?"

It is usually easier to stimulate the formulation of the research questions by asking the young investigators what they would like to know more about or find out about. For example, in anticipation of the visit of an expert, the teacher can more easily get the children to generate a list of questions by asking them what they would like her to talk about, tell them about, say more about, show them, than by asking them "What questions do you have?" It is especially important with young children to view the first list of questions as a beginning for the investigation process. The list may be replaced with an entirely new list as a new facet of the topic captures interest and may dwindle as answers are found.

### Moving into Phase Two

Once questions to investigate have been generated, they serve as the foundation for the investigation. Determining the direction of the project shifts to the young investigators. Children, with teacher support, can now make decisions about what to investigate, how to find the answers to questions, and who to talk with or visit. They have the knowledge to progress in the project because the teacher has taken the time to focus the children on the topic, listen to their interests, and build the common experiences that will be the foundation for investigation and exploration. The project is off and running!

# Making Sense of Location: Mapping the Kindergarten Park

**Sylvia C. Chard**
University of Alberta, Canada

Most young children enjoy making marks on paper. They appreciate the opportunity to communicate ideas in drawing or "writing" that can be "read" by others. They will put considerable effort into representing a reality that has some personal meaning to them. The opportunity to make field notes on a field visit to observe real phenomena firsthand is welcomed by children as young as 3 or 4 years old. Their willingness to carry clipboards on a field visit and their concentration as they work to record their observations on paper attest to many children's appreciation of the process of representing their experience. In this paper, I would like to indicate some of the characteristics of young children's map drawing and to invite teachers to examine the maps their children draw for the learning possibilities inherent within this activity. Map drawing is all about the question "where?"

## What Does the Question "Where?" Mean?

I will begin with a personal story. It was a long time ago—before I knew anything much about early childhood education. My husband and I and three sons—ages 2, 4, and 5 years—moved from England to America. As the departure date approached, I began to prepare the boys for the move that was to change their lives. We talked about America. One day my youngest son, 2 years and 10 months old, said, "Mummy, where is America?" After a moment's pause, I took him to the window and pointed down the street in a westerly direction. "If you follow the roads for a very long way you get to the sea, then if you take a boat and keep on going across the sea, you come to America." "No," said my son, "I mean, *where is* America?" His question hung in the air. I tried again. "We will take an airplane and fly for a long time till we get to America. There we will find a house like this one in a road like this one . . ." "No, NO!" said my son, "*WHERE IS* America?" "See here," I said, hopelessly recognizing my inability to answer his question. I took the globe from the table. "These green places are land, and this blue part is the sea. We live *here* on this map, and America is over *here*." "NO, NO, NO!!" wailed my son, now becoming distraught, "I said, WHERE IS AMERICA?" At this point, I saw only the impending tantrum developing over my failure to understand. I gathered my son into my arms and took him to a chair where I told him a story about a family who moved house and packed up all their things to go to another place. It did not satisfy him in terms of his original question but allowed normal relations to be resumed for the time being.

What does it mean, this question "where?" The location of any object is usually understood only in relation to other objects. For young children, objects and people are located in rooms in relation to furniture. "Where's my Teddy?" ("Under the cushion.") "Where's the cat book?" ("On the table.") As children get older and their horizons expand, they ask, "Where's Daddy gone?" ("He's gone to work.") "Where does that bus go?" ("It goes downtown.") The answers to questions about location require the questioner to imagine a mental placeholder.

to anticipate the answer. Satisfactory answers to the question "where?" provide information that enables the questioner to construct a fuller understanding of the location of a given object, person, or place. The idea of a location as the name for a large area full of buildings and streets within which is situated the place you call home is a complex matter for a young child. Even more so is the concept of a single name for a large landmass within which are mountains, prairies, forests, lakes, and cities. Learning about location has to begin simply in experiencing everyday life.

## Mapping the Kindergarten Park

One group of kindergarten children in a child care center recently made a study of a nearby area of snow-covered grassland with a few trees and a picnic table. This space eventually became known by the children as the Kindergarten Park. First the children talked about parks they knew and outdoor places they liked to spend time in. Then they took pencils, paper, and clipboards and walked to the space with the trees and the picnic table. It was winter, and there was snow on the ground. The children found interestingly textured surfaces to make rubbings of. They investigated the snow ("Can we eat it?"). They took it inside the classroom and sorted the various small rocks, leaves, and sticks that were mixed with the snow when it melted. They found an insect. Snow was definitely not good to eat. They refroze the melted snow water in the freezer and decided the snow was also ice. Under the snow, there was the remains of last year's grass. "Was it dead or was it still alive?" was a question much debated throughout the life of the project on the park. Thus, one question led to another as the project progressed.

## Three Dimensions to Two

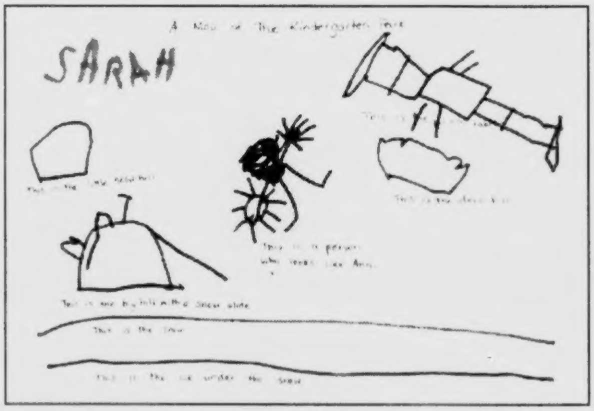
The most significant learning for this group of kindergarten children was about location. Together with their teacher, they decided to make a model of the park—a replica, a diorama. The teacher and the children gathered up what they might need to represent the park. They took a piece of Plexiglas out on to the snow and looked over at the park. They decided which objects should represent which items in the reality of the park and its surroundings. There were the snow hills to be represented by large shells. There was one evergreen tree, and there were several deciduous trees with no leaves to be represented by fir cones. There was the picnic table. There was the fence, and there were people to be represented engaged in various activities. The children discussed the nature and relative location of these items as they developed their representations and decided how each feature of the scene should be represented.

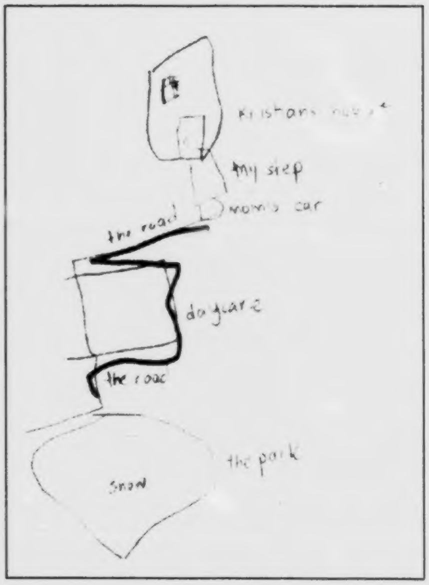
The children took the diorama back into the classroom, and their teacher used the hot glue gun to stick down the various items in fixed locations. This diorama became the focus of various kinds of play by the children acting out the different perspectives on the park taken by other interested users, the people, the magpies and blue jays, the fox, the snowshoe hare, and the insects. Meanwhile, day by day, the blocks, chairs, and a table, bolts of fabric, cushions, and whatever else could be commissioned to represent some feature of the park enriched the context of these kindergarten children's dramatic play. Visiting experts included a naturalist and road safety expert. A collection of books about parks, animals and birds, plants, and gardens was available for children to look at and for the teacher to read to them.

**Sharing Examples**

Already in the project described above, the amount of exploration of space and location is considerable. Following the construction of the diorama, the teacher read to the children from the book *Me on the Map* (Sweeney, 1996). There was also a tourist map of the town in which the child care center was situated available for the children to investigate. On one visit to the little park, the children set out with their clipboards, plain paper, and the intention of making maps. The diversity with which the children responded to the challenge of map making was surprising to their teacher. One child made a map from her house to the school and from the school to the little park. Another child drew various items in the park in realistic spatial relation to one another, a tree, the picnic table, and the cinema across the road. Twins stood beside each other facing opposite ways and drew in different directions, each starting with the same tree in the foreground.

In the next few days, map making became a favorite activity. The children made maps of all kinds of spaces. Parents commented on children asking to see where they were going on the map, and where they lived on the map. Children drew maps at home, of their houses and streets, and of rooms in their homes. They were fortunate to have a teacher who watched them, learned the various individual levels at which they were understanding their experience of the park, and helped them each to represent their understanding in the form of maps that increased in complexity as time went by.


A Map of The Kindergarten Park
SARAH
This is a person who looks like Ann
This is the big hill with a snow slide
This is the snow
This is the ice under the snow


Kristans house
my step
mom's car
the road
daycare
the road
the park
snow

## Some Benefits of Map Making for Young Children

What were these children learning as they worked through their preoccupation with maps? Maps are representations of physical location. Usually the representational activity known as mapping involves one-to-one correspondence with phenomena observed in a given place and their represented location on a page. However, the choice of details to be represented in maps even for adult use is quite selective depending on the use to be made of them. For instance, there are maps with little detail for people wanting to drive from one city to another. There are also maps that are used by people to find their way through a network of streets in order to arrive at a particular building within a city. These do not usually indicate actual houses, trees, or other quite large landmarks that may be seen along the way. Then there are pictorial maps designed for tourists who use them to locate particular buildings or monuments of local interest in a place they are visiting. Young children tend to draw large scale, including representations of the landmarks on their maps, combining front and side elevations of buildings with bird's-eye-view map drawing of the streets. In one of the maps drawn by the kindergarten children of their little park, there was a large cinema that could clearly be seen on the other side of the street from the park.

## Simplification

Usually maps are designed to a scale that allows a reader to judge how far apart things are in a miniature representation that translates actual size to a much smaller version. The map is thus a powerful way to reduce and manage information that would otherwise be difficult to understand. A map brings an area of town or rural landscape down to a scale that empowers the reader to appreciate where they are in relation to a wider range of other phenomena. When they have some understanding of the extent of the reduction in size of the location, they can also plan to walk or drive to another location with a good idea of how long it will take to get there. Through early map making and map reading experience, young children can learn about distance. They can also learn about time taken to walk or drive particular distances. Children can acquire a sense of the physical size and shape of areas familiar to them.

### Orientation

Another feature of a map allows a reader to see where things are located in relation to other phenomena represented. When only two landmarks are shown in a drawing, such as a home and a school, both the distance and the curves and angles in the path between them can be represented. However, from such a map, it is not possible to know where the home and the school are in relation to a local park or a shopping mall that are not on the path between the home and the school. A map can also be a means of representing an area that includes several landmarks within it. Then a reader can choose to walk or drive through the area, judging not only the distance between locations but also the relative position of landmarks and the direction of the streets that link them. Through their map making, young children learn about direction and the relative positioning of landmarks in particular places.

### Security

People who can read maps do not fear getting lost. Informally, people draw maps of how to get to their houses from well-known landmarks. They draw maps so their friends can find them without getting lost on the way. Usually they draw and label the most important intersections. They also draw and label landmarks at significant points along the way. The scale often gets larger as the destination is approached. Interestingly, young children tend to do the same in their map drawing. One child drew the way from the school to the park with the park taking up most of the space on the paper. Then once they went swimming, the same child drew a map going from the park to the swimming pool, with the swimming pool drawn much bigger than the park. Gradually, children learn to appreciate the value of a fixed scale so that maps they make can provide a reliable aid to help a person find a place. Map making enables young children to experience a growing familiarity with how to integrate these important concepts in relation to location: distance, direction, size, shape, relative position, and scale.

### Parents Can Appreciate Children's Growing Interest in Maps

In the case of the kindergarten park, the parents were impressed with their children's desire to learn about maps. Here were some of the comments written to the teacher by the parents:

> My daughter was very excited about the "park" project. She liked coloring on wood circles and has done it since. She is also very interested in maps since the project and has made two maps at home. On two separate occasions, she asked about how to draw a map of how to get to our home.
>
> My son liked the park project very much. I heard about it every day as we passed the park on the way to kindergarten. Since the project, my son has become very proficient at drawing maps. He also seemed to really like the close observation

> aspects: using the magnifying glass, observing the bug in the bug jar house, etc. I think it was a great project for the kids. They really developed a sense of ownership. My son still calls it "Our Park" and notices changes as we drive past.
>
> My daughter is drawing maps of everything at home. The other day she put her easel in the kitchen and drew the bricks on the wall, the birds and their cage, and her sister sitting in a chair. Everything was drawn in careful proximity.
>
> My daughter had a lot of fun with this project. She is always drawing maps of the park. She talked to us about all the events of each visit. I think it was a great idea.

## Conclusion

Making marks, early representational drawing, and writing can easily be understood by children as a means of communication, an alternative language by means of which ideas can be shared. When the children in a class make a field visit to learn more about a location, each child's marks on paper can contribute to the collective understanding of the field experience. One form of representation that can be particularly useful to young children is the map. When children make their own maps at class project field sites, teachers can have access to a wealth of information. They can learn about what the children observed and how they understood the various aspects of and relationships among the objects, people, and the events at the location they visited. Gradually, young children develop a basic understanding of how to represent location, starting with their own home and school. This early experience can greatly facilitate the more complex geographical understanding teachers expect children to develop in the later elementary school years.

## Acknowledgment

Thanks to Ann Sheehan for the material about the kindergarten project on the local park. To see Ann Sheehan's own account of the project you can visit http://www.project-approach.com/examples/park/Park_project.htm on the Web.

## Reference

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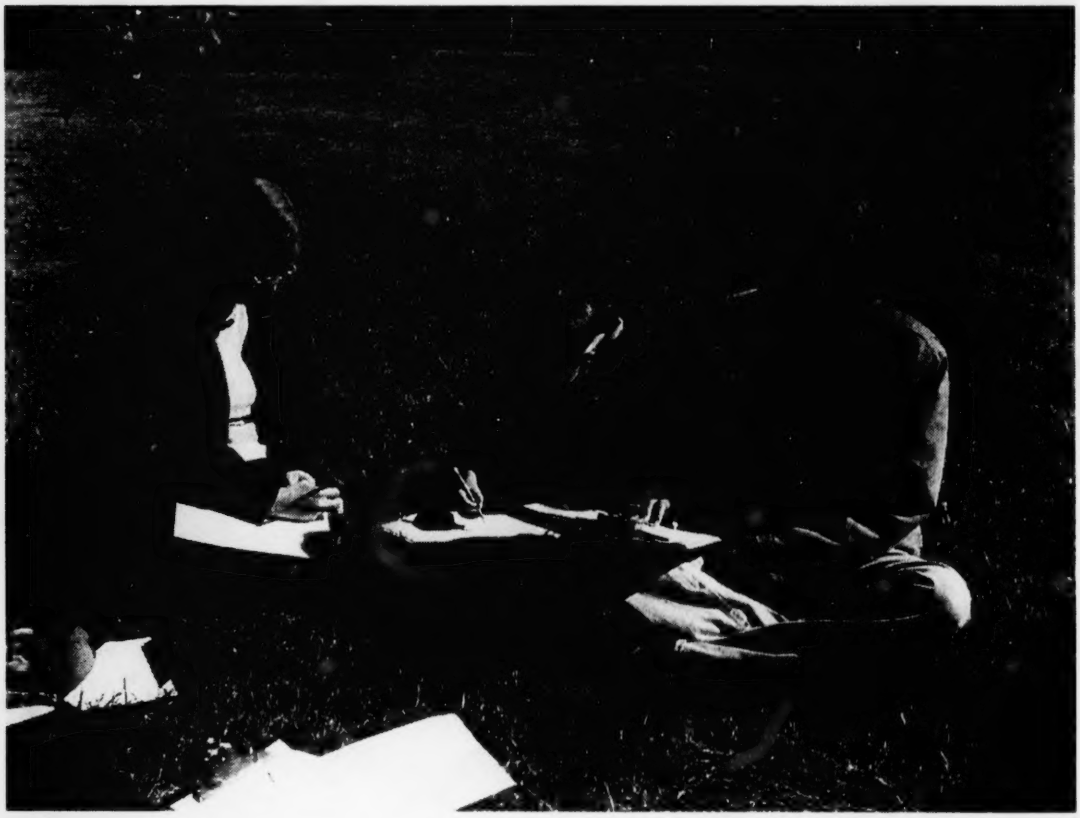
## *Section 2*

# Learning How to Guide Projects: The Teachers' Journeys



# Implementing the Project Approach: What Teachers Say

**Judy Harris Helm**
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Presenters for the NAEYC Project Night are selected to present the projects completed in their classrooms by the leaders of the Project Night. Their documentation has been viewed by the leaders of Project Night, and in many cases, their classrooms have also been visited. These teachers are successful implementers of the Project Approach. Their years of experience in doing project work have yielded valuable insight into not only the process of how projects evolve in their classrooms but also into how they learned to facilitate project work.

To capture teacher thoughts about projects and to provide a more complete view of how projects take place in classrooms, surveys were sent via electronic mail to teachers who were selected to display projects at the NAEYC project night. Twelve surveys were received from the participants. Six of these teachers are in classrooms primarily with 3-year-olds, or 4-year-olds, or multiage classrooms of 3- and 4-year-olds. Four kindergarten teachers and two primary (first and second grade) teachers returned the survey. The teachers were asked to indicate the type of programs in which they teach. Seven of the teachers responded that they were in public schools. One teacher listed her program as a laboratory school. Two teachers described their programs as laboratory schools that were also child care centers. One teacher indicated that the program was a child care facility, and one a private preschool program.

The teachers who responded to the survey indicated that they had been doing projects from 2 to 10 years, with the majority of the teachers (8) using the Project Approach in their classroom for 2 or 3 years. The results of the survey were analyzed and are summarized in the following two sections: Part 1: How the Project Approach Is Implemented in Classrooms, and Part 2: How Teachers Learned How to Guide Projects.

## Part 1: How the Project Approach Is Implemented in Classrooms

### How often have projects been occurring in the classroom?

Many teachers first learning about projects imagine that when a teacher uses the Project Approach, there is always a project going on in the classroom. The teachers reported in the surveys that this impression is not true, and that there are periods of time within the school year when projects are not occurring at all. Eight of the 12 teachers indicated that generally only two projects occur in their classroom during one school year. Two of the programs that were in session during the summer indicated that they often had an additional project that occurred during the summer session. The teacher with the most experience guiding projects (10 years) was the only teacher who reported doing projects four or more times a year.

## How do teachers allocate time for projects in their daily schedules?

Teachers who are first learning how to do projects often ask how projects fit into the daily schedule. All 12 of the teachers surveyed indicated that they set aside specific time for project work. Eleven of these teachers indicated that they also integrated project activities into regularly scheduled activities. It appears that there are special times when only project activities are occurring but other times when project activities are part of other work in the classroom. One teacher described projects in her schedule this way:

> We usually use the first 40 minutes of the class to work on projects. Not all children are involved everyday. Some of the large-group time may be used for discussion and planning. Extra class meetings may be held with all the children during other parts of the class or with some of the children during the first hour. If interest is high or important work is happening, we are flexible with the schedule.

When specific time was allocated for project work, it varied from 30 to 90 minutes, with the majority of teachers allocating 60 to 75 minutes. Specific time set aside for project work appears to take place in the morning. Only one teacher reported that a specific time for project work takes place in the afternoon, although teachers indicated that project activities were sometimes integrated with other scheduled activities that occurred throughout the day. Several teachers indicated that project work occurs in a block of time in which children are able to choose what they want to do—called "center time" by some teachers and "choice time" by others.

Teachers appear to be flexible about how projects fit into their daily schedule from project to project and from day to day. One pre-kindergarten teacher commented:

> There are times that all of the class have been involved in a project. On those occasions, project time is a separate time in the daily schedule; the project overtakes the curriculum for a period of time.

## How are curriculum goals or performance standards integrated into projects?

Eight of the 12 teachers were in programs that required curriculum goals or performance standards. All four of the teachers who indicated that they had no curriculum requirements were teaching 3- and 4-year-olds. All kindergarten and primary teachers indicated that they had requirements. Although many teachers who are first learning to do projects express concern about covering curriculum, these veteran teachers of the Project Approach did not report this concern. When asked what was the most difficult thing to learn or the greatest challenge for them today in doing projects, no one listed incorporating curriculum requirements or meeting performance standards.

Several of the teachers indicated that the project process itself incorporated many required objectives during the three phases of the project work:

> The children use scientific processes, describing, comparing, predicting, testing, etc., throughout research and construction phases. As they sketch and work on construction, we see development in art abilities and mathematical thinking. Language skills, social skills, and social studies knowledge improve during work as

> children discuss problems and negotiate with each other, learn new terms and ideas, describe their learning for documentation, and use new knowledge about nature, the community, work people do, and how things work in enriched dramatic play.
>
> Through cooperative group interaction, I feel that I am achieving standards for language arts: speaking, reading, writing for social interaction; math: graphing, counting, classifying; and social studies: our community and the student's role in it.

One teacher listed the variety of curriculum activities that occurs in most projects:

> Writing of signs and labels
> Number work through cash registers, use of money, counting, and data gathering
> Oral reading particularly of expository texts
> Speaking and listening among the children to make plans
> Decision making, working on shared ideas
> Group writing related to the topic (with specific mini-lessons that illustrate specific words, spaces between words, and sound spelling with initial and final sounds)

Other teachers indicated that the topics of projects made a difference and that many of the project topics coincided with curriculum goals or objectives. One teacher reported that she was able to integrate many of the standards and goals of both the state and the local school district through the topic being studied. This teacher found that language arts and math standards were the easiest to integrate into the projects. She also tried to select topics for projects that helped her meet social studies and science standards. Several teachers reported that they incorporate the required goals naturally during the three phases of project work. Those goals that are not incorporated are taught during systematic instruction. One teacher describes the process this way:

> I use the relationship between the project topic and the curriculum goals to develop and meet the goals that naturally fit with the project. When a curriculum goal does not fit at all into a project (e.g., there was not much science in the museum project), I use another activity in another part of the day to meet those curriculum goals.

A number of teachers described using an instructional web, curriculum web, or a planning web. These webs are completed at the beginning of a project by the teacher (without the children's help) and provide a way for the teacher to think about the directions that a topic might go. Curriculum goals are usually incorporated into the web. Several teachers also suggested that documentation of the achievement of curriculum goals was important. One teacher also indicated that the projects aided the assessment process, "We learn more about the children from the project work and through the documentation process than when we organize subjects around a theme."

### What criteria are used for selection of project topics?

The selection of a topic for a project is an important part of the Project Approach process. Several teachers reported topic selection to be the most challenging part of guiding projects with children. No teacher listed selecting a topic as the favorite part of the project process. It appears that most teachers completing the survey go through considerable thought and debate with others before deciding on a project. The majority of teachers in the survey responded by describing a process of selection similar to the one described by this teacher:

> We watch and listen to the children to see what they might be interested in. We evaluate the various themes that seem to appear to see if the children have prior knowledge or experience with the topic, if the topic will provide opportunities for hands-on experiences, if we can easily get visitors to come in or set up field site visits, and if we feel the topic has value for our children and is related to their life and experiences.

Another teacher described a series of questions:

> Do they have prior knowledge to build on?
>
> Does this topic offer broad opportunities for creative representation, for example, observational drawing, clay, woodworking?
>
> Will the topic offer a range of opportunities for early literacy and numeracy skills?
>
> Does this topic lend itself to block play, dramatic play, or cooperative play?
>
> Are there good resources available (e.g., field sites, visiting experts, children's books)?
>
> Are the teachers enthusiastic about the topic?

Most of the teachers described starting with children's interest or starting by introducing a variety of topics and then watching to see which topics interested children. The primary and kindergarten teachers reported using curriculum requirements as a major consideration in selection of a topic. Teachers of 3- and 4-year-olds indicated that the opportunities for representation (building, drawing, creating) were important. Logistical considerations such as location of field sites, availability of experts, and the availability of books and resources on the topic were also important.

Several of the teachers mentioned the worthiness of the topic. The term worth was used to indicate the value of the time spent on the topic compared with the benefits that the children might gain from studying a topic in-depth.

**What project topics were most successful?**

Teachers listed a variety of topics of projects, with many teachers naming the same topic. Topics have been grouped into categories:

- Projects about living things
  *Butterflies, insects, dogs, cats, squirrels, fish, trees, pets, plants, birds, tadpoles and frogs, animals*
- Projects about the outdoors
  *gardens, butterfly garden, water, food, soil, weather, rocks*
- Objects
  *Camera, plumbing*

- Places
  *Our school, play yards or playgrounds, offices, kitchen, hospital, grocery store, restaurant (a variety of types were named), tree house, supermarket, post office, real estate office, museum*
- People
  *Custodian, veterinarian*
- Vehicles
  *Fire truck, school bus*
- Miscellaneous
  *Recycling, hair styling, cooking*

The most frequently mentioned topic was butterflies, which was named by three teachers. The school and parts of the school, such as the office, were also frequently mentioned. Most of the topics listed meet the guidelines that teachers indicated in the selection processes that they described. These topics are also in the immediate environment of children and can be studied firsthand. It is also interesting to note that these topics are included in many curriculum guides.

### How are parents involved in projects?

One of the suggested benefits of the Project Approach is the involvement of parents. The survey indicated overwhelmingly that parents do become involved in project work. All of the teachers completing the survey reported that parents had been involved in projects in their classrooms through each of these activities: serving as experts in the classroom, assisting with field trips, providing materials for construction, helping out in the classroom during project activities, attending culminating activities, and viewing documentation. Six teachers, 50%, reported that parents assisted with documentation (photographing, videotaping, etc.). Specific additional examples of parent involvement that were described included answering surveys by children, researching and following activities at home, and other family members (grandparents and older siblings) serving as visiting experts. One program had once-a-month parent/teacher group meetings where documentation was shared and projects were discussed.

## Part 2: How Teachers Learned How to Guide Projects

Learning how to do projects is often described as a journey, an ongoing process. The 12 teachers who completed the survey confirmed that concept as they described their challenges and goals for their teaching.

### How were these teachers teaching before they learned about the Project Approach?

When the teachers were asked how they were teaching before they learned about the Project Approach, most of them (10 teachers) reported that they had been providing teacher-planned experiences of inquiry and investigation. Implementing the Project Approach for them was a matter of learning how to relinquish some of the decision making to the children. The challenge of giving children more control over their learning was also listed by many of the teachers in answering the question about the most difficult thing they had to learn. Although these teachers were previously using inquiry methods and believed in the importance of stimulating intellectual development in children, it was difficult for them to move into the more child-initiated learning experiences that the Project Approach requires. This struggle can be seen in these teachers' answers to the question "What was the most difficult thing for you to learn when you began to do projects?":

> To stand back and LISTEN to the children and let them take the initiative.
> To let things flow—drop preconceived notions of what should be accomplished in one particular day or time period.
>
> It was hard to give up the control and direction of the topic and the project to the children.
>
> I have always followed the interests of the children and taken advantage of "teachable moments," but I am a planner so being able to let the children guide our daily activities was a struggle at first.
>
> I think I always was headed in the direction of this and worked toward these types of responses and interactions, but with project work, I became more aware and spent more time really trying to get better at doing these things.
>
> How not to give children all the answers but to be patient and serve as a guide, resource, and co-questioner with the children. I worked at asking better questions and getting better at responding in such a way that it encouraged children to talk more, think more, and problem solve more.

However, when asked about their greatest challenges today in doing projects with children, none of the teachers indicated that following children's lead or providing for child initiation in learning was still a problem.

### How did they learn how to guide projects in their classrooms?

Ten of the 12 teachers attended conferences or workshops such as the Allerton Institute to learn how to do projects. All of the teachers but one reported reading books about projects. Nine of the teachers reported also learning how to do projects from other teachers. Only two teachers had any training in their teacher education program on the Project Approach.

### Did they receive administrative support for implementation of the Project Approach?

When the survey results were analyzed, it was clear that the teachers who were successful in implementing projects had received support from many different areas. All the teachers responding to the survey reported that they had administrative support for implementation. All 12 teachers reported that administrators provided encouragement and interest in what they were doing. Ten of the teachers stated that administrators had been involved in provided training experiences for them. Administrative support went beyond providing access to training. Eight of the teachers were given additional funds for project materials and equipment, and five received additional funds for field trips. Administrators served as resources for coordinating curriculum with the project for three of the teachers, and five teachers said their administrator relaxed time requirements to enable project work to happen. Only one administrator secured additional space for project work.

### Did colleagues support their implementation of the Project Approach?

Eleven of the 12 teachers reported that colleagues were supportive of their project work. That support took the form of encouragement and interest. Nine of the teachers reported that colleagues viewed their documentation and discussed alternative strategies and problem solving with them. Six of the teachers received assistance from other teachers in doing project activities. Eight teachers actually teamed with colleagues on projects.

### What are the biggest challenges today for these teachers implementing the Project Approach?

Time was the biggest challenge for teachers. They expressed the need for time for documentation and reflection. Their desire to do documentation that was meaningful and productive, not just to make a history of events, was prominent in many of their comments throughout the survey. One teacher expressed her desire to change by:

> Using documentation for more than just a record of the project. Really working to find the time to study our documentation to learn more about the children, their thought processes, etc., so the documentation can serve to guide us in our project as well as our planning and interactions with children.

Time for preparation was also a problem. Teachers expressed the need for time to do paperwork related to the project, secure materials for construction, contact field site personnel, and to work with parents. In the words of one teacher:

> Good projects, really good projects (the ones that you'll want to document well) take lots of teacher time, and it's hard balancing everything else you have to do in the classroom with the project. Many of these things can intertwine with project stuff, but the teacher usually has lots of paperwork at the end of each day. Still, the outcome far outweighs any negatives, and this wouldn't deter me at all from engaging my children in projects.

Several teachers also mentioned the challenge of incorporating children who are not there on a daily basis and the challenges of working in teaming situations.

### What advice do teachers have for those just beginning project work in their classrooms?

The teachers surveyed were generous and gentle with their advice, calling on teachers to go slow, to set reasonable expectations, and to not forget to step back and enjoy watching and participating in the learning experience. Some of their thoughts follow:

> Keep it up, support others who do project work, talk with others who do project work.
>
> Go out and visit programs that are implementing the Project Approach.
>
> Join a support group so that you can talk to colleagues about your work.

> Join the Listserv where you will get ideas, advice, and info.
>
> Find a mentor who will visit your classroom and give you constructive criticism.
>
> Attend conferences that offer presentations on project work.
>
> Work on becoming skilled at documentation, which will help educate parents and colleagues about the benefits of project work.
>
> Don't be timid about beginning. Sure it's important to go to training and to read about the Project Approach, but if that's all you ever do, what is gained? I always tell teachers wanting to try it to jump in with both feet and stop hovering over the fringes of the Project Approach. After all, we're just like the children, we learn best by exploring and investigating!
>
> Take your time and realize that it is also a learning process for you as well as the children. Project work becomes easier with each project; you learn new and better ways to stimulate learning each time.
>
> It is okay to do phase one work a few times before doing a complete project.
>
> Expect high-quality work as an end result, but allow for mistakes in the process.
>
> Keep a journal/diary of daily/weekly progress.
>
> Invite children to comment, give suggestions, and encourage each other.
>
> When other teachers see how interesting project work is in your classroom, they get interested and want to try it. The enthusiasm generated by your class's successful work and completion of a project stimulates other teachers.

The following comments of Barb Gallick, one of the survey respondents, summarize the thoughts of many of the teachers:

> I think it's important that teachers give themselves permission to change and just jump in at whatever level of understanding they have and try. I think just trying a project provides such a rich source of learning for both the children and the teachers. . . . I think teachers are afraid to take the leap and try a project for fear they don't get it or don't understand how to do it. But my experience has been that I have learned so much and become more comfortable with project work with each new project. I feel I have learned so much from "making mistakes." Each new project progresses in a different way with each new group of children, but all that I have learned and experienced from past projects serves to make me more comfortable, more confident, and more interested in learning more. If I had never been willing to try just once, I may never have gained the level of understanding I feel I have now. I still feel that I am learning and growing along with the children in my care. I don't think I will ever feel that this learning and growing will end. Part of what I feel is so valuable about project work is that it is a continually evolving process based on the children in my care, the topic, and the point I am at in my life as a teacher. Project work opens the door for tremendous growth on the part of the children as well as the teacher.

# Supporting Teachers in Project Work: The Administrator's Role

**Cathy Wiggers**
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Many administrators understand the importance of using the Project Approach and are encouraging and supporting teachers in learning the process. Project work can bring about high-quality learning in which children become engaged in their work and aspire to do things well. Through this process, children have the opportunity to become decision makers and take responsibility for their accomplishments. Through project work, children can also develop their literacy skills as they use reading and writing for many purposes.

Learning to do projects with young children is a challenge. Teachers sometimes have difficulty making the transition from their instructional plan to truly following the children's lead and letting them determine the direction the study will go. Recognizing children's interests and going with them in that direction can be challenging. Teachers must learn to be supporters, to scaffold children's learning by knowing when to step in and support and when to remain an observer. Children reveal what they can do without the help of the teacher and also show what kind of help they need. It is up to the teacher to provide a supportive environment where all children can move forward in their learning.

To be successful in using the Project Approach, teachers need the support of administrators. Administrators can support teachers in their learning by providing on-site professional development courses and workshops on the Project Approach, by providing mentor teachers for those teachers new to projects, and by encouraging small groups of teachers to meet for sharing ideas and experiences. It is very helpful for teachers when principals and center directors participate in Project Approach training with their staff so they can more fully understand the strategies and the benefits for the children. Understanding key areas for implementing project work makes it possible for administrators to:

- *Support a problem-solving classroom, allowing the teacher to alter the environment and provide resources and materials appropriate for engaging in an in-depth study.* Give the learners in the classroom, both teachers and children, the autonomy to work together through projects and topics of study that excite and challenge children in appropriate ways. Adequate space will be needed for large-group, small-group, and individual work with many artifacts, real materials, and resources available for children to use.

- *Allow flexibility in scheduling to provide extended work times for in-depth study of the topic.* Teachers often need to schedule long blocks of work time without interruptions during which content areas are integrated through the project work based on interests of the children. Recognize that some days the schedule may need to be altered according to heightened interest, needs of the children, and where they are on the project.

- *Provide team-planning time for developing projects, making the curriculum come alive.* Schedule time for teachers to come together for a 1- to 2-hour block of time each week for developing projects and planning curriculum. At Valeska Hinton Early Childhood Center, teachers in rooms that are located near each other meet once a week after school.

- *Give teachers and children access to up-to-date equipment, including a computer with printer and scanner, camera and film, video camera, and an overhead projector, for representation and documentation throughout the project.* Include preschool children or classes in the school or district technology plan. Over a 1- to 3-year period add equipment and software to the classrooms. Availability of a computer and printer for young children to use is necessary during work time. If classes need to share, use child-size rolling computer tables that can be easily moved from one classroom to another until one or more computer stations can be provided within each classroom.

- *Have systems in place that allow teachers to obtain supplies quickly as the project evolves.* Teachers will be able to help children carry out their project work with many donated materials that are easy to find. However, on those occasions when something does need to be purchased with funds from the classroom/program/school budget, it is helpful for teachers to be able to get approval and purchase the items in a timely manner. The process can be expedited by reimbursing the teacher for the purchases or having a charge account at a store such as Wal-Mart.

- *Allow field trips to be planned and taken when needed for investigation at key times to further learning and progress in the study.* For learning to be encouraged and not hindered, the timing of fieldwork during a project can be crucial. Approval of field trips within a few days is helpful. The teacher will need to visit the site ahead of time to work out the logistics of group work at the site and to prepare the experts at the site for their role in teaching/sharing with the children. It works best for field trips to be scheduled as needed rather than have a preset schedule one time per month or once each quarter of the school year.

- *Encourage parents to be present in the school and the classrooms as observers and volunteers.* Everyone in the school should welcome parents when they enter the school. Parents can sign in at the office and pick up a volunteer badge to wear while they are working at the school or accompanying the children on a field experience. Parents who come on a regular basis could receive a T-shirt to wear when volunteering. This gift gives parents recognition for their efforts and helps others recognize their connection with the school.

- *Insure time for teachers to share project experiences with each other to support one another and experience more of the excitement of learning.* At Valeska Hinton, "project sharing" groups meet over coffee in the morning or during lunch on a Friday. The groups meet every few weeks to talk about the projects their classes are working on. Informal discussions allow for progress to be shared or problem solving to take place as needed. Teachers can help one another determine the best places to go for a particular field experience or where to find an expert to visit the classroom or how to support children in a certain way to carry out their work.

- *Plan training time for all teachers on staff to become grounded in using this strategy and for administrators to participate alongside them.* Training can take place in a variety of ways; however, it takes approximately two to three days of training to feel confident enough to embark upon and complete a project for the first time. Two full days of training with a follow-up day one month later is an ideal way to help teachers beginning project work. If this schedule is not possible, five evenings over the course of two months' time may be adequate. Follow-up training is advisable.

- *Allow for central, visible display areas within the school for drawings, photographs, murals, and three-dimensional representations for children to share their learning with others.* In hallways, 3-inch by 12-foot tack strips placed horizontally about 24 inches apart make ideal display areas for project documentation displays. Three-dimensional items can be displayed on the floor or on low tables lining the hallway walls. Other central areas such as an entry foyer, a corner of the cafeteria, or an all-purpose room, used as display areas, call attention to the work accomplished and the learning that is taking place through project work.

- *Encourage teachers to share their knowledge and experiences with the broader community to influence others and broaden their own knowledge base.* Teachers can share at local, state, and national conferences. Local museums, banks, or other places of business will sometimes allow schools to display the work of the children for a period of time. Sometimes the place children visited on their field experience makes a good display site. Valeska Hinton is planning a project sharing night for the spring. Other programs or schools in the local tri-county area will be invited to come together to display projects and talk with one another about their work.

Many directors and principals make a point of visiting classrooms during work time to see the progress of the projects and listen to children talk about their work. They see adults becoming partners learning with children. Children are assuming responsibility for their own work. It is impossible not to enjoy visiting a classroom where a project is in process and learners are engaged in what matters to them. Through project work, we see how children learn by letting them show us what they are doing and thinking. We watch them make connections building on what they have learned in order to continue learning.

Taking the time to support teachers and projects has many beneficial results. When teachers learn to do projects, they do more of an in-depth analysis of the learning that is taking place in their classroom than they might otherwise. When they see the higher level thinking their children are doing, they raise their expectations for their children. I have seen more sharing and discussion with colleagues as teachers engage in problem solving and study together how to reach higher levels of learning in their classrooms. This experience affects their teaching in a positive way. Teachers ponder more deeply how they support children and their learning. They are likely to have a greater passion for how children learn. Learning to do the Project Approach affects all areas of teaching, not just project work.

# Learning from Teachers: Lessons from the Illinois Project Group

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Educators become interested in the Project Approach in a variety of ways and begin implementing it with varying levels of training and support. For example, some teachers may have received ongoing training from an authority in the field, such as Lilian Katz, Sylvia Chard, or Judy Helm, while others may have read about the approach in a book or magazine, attended introductory or advanced workshops, and decided to give it a try. When they hit a difficult stage in the development of the project, they often feel "stuck" and unsure about how to proceed. The flexible nature of the Project Approach allows teachers to respond to the interests and abilities of the children in their classrooms with individuality and creativity. However, when teachers attempt implementation without the support of administrators, or without a community of colleagues who are also trying to implement the approach, they are often hungry for advice from others on how to proceed and for feedback about the quality of their work. They find it beneficial to get together with teachers from other programs to compare notes. Experienced teachers, administrators, and curriculum developers also enjoy the opportunity to share their experiences with implementation. This sharing process has been enhanced by the recent emphasis on documentation (Helm, Beneke, & Steinheimer, 1998).

For these reasons, in March of 1998, a group of educators from around the state gathered at Illinois State University in Normal, Illinois, to hold the first meeting of the Illinois Project Group. Approximately 50 people with varying roles in the field of early childhood education attended that first meeting. By the spring of 2000, when the group met for the third time at Illinois Valley Community College in Oglesby, Illinois, attendance had more than doubled. The following practices and principles developed in these meetings may prove helpful to teachers in other states who would like to form similar groups.

## Sharing Ownership

Although the group has grown, we have managed to maintain an informal, collegial organizational relationship. At the first meeting, we decided that we would take turns meeting at a different site each year, so that the meeting would not be the province of any one organization or group. The only requirements are a space to set up displays of project work, the room to discuss project issues in small groups, and a place for the entire group to gather as a whole. Each year, someone new has stepped forward to host the meeting.

## Sharing Responsibility

The Project Group meeting is a "teacher-to-teacher" day. Workshops and inservices play an important role in the professional development of teachers, but the Illinois Project Group

Meeting works in a different way. There are no paid speakers, no materials to purchase, no large registration fees. Participants with varying levels of expertise and credentials come to the meeting, and everybody has the opportunity to share and reflect on their experience and to learn from others through viewing and discussing documentation.

## Organizing Discussions around Children's Work and the Interests of the Group Members

The format for meetings of the Illinois Project Group has been simple and successful. Based on our experience, the following tips are offered for those who would like to hold similar meetings:

- Form a leadership team, a core group of people who are willing to get things rolling.
- Meet on a Saturday—many early childhood programs have limited funds for professional development and cannot afford substitutes. By meeting on a Saturday, a group of staff members can attend as a team.
- Begin to announce registration for the meeting several months in advance. Ask members of the leadership team to distribute flyers.
- Create a brochure for registration. Gather electronic mail as well as street addresses through the registration process. Use this information for ongoing communication and networking about the meeting.
- Make it clear in the brochure that novices as well as teachers who are experienced in project work are encouraged to attend.
- Indicate in the brochure the type of tables or other display area that will be available for project documentation. Decide whether you will provide a cloth to drape the table or whether presenters should consider bringing their own.
- Welcome documentation of projects that are "in process" as well as documentation that has been prepared for formal display.
- Wait to begin the meeting until 10 a.m., so that educators from around the state can attend without the expense of lodging. End your meeting early, so that participants have plenty of time to get home. The Illinois group ends at 2 p.m.
- Allow time and space before the meeting for teachers to set up displays of their project work for display. We have found it helpful to ask teachers in advance how many tables they will need for their displays. Allow plenty of room between the tables to encourage groups of teachers to gather informally for discussion. For example, 20 projects were displayed at our most recent meeting, so a long well-lit hallway was used for the project-viewing area.
- Begin with a brief gathering of all participants to explain the schedule for the day and important locations. Include a challenge from a group member who is a leader in the field. In Illinois, we have been fortunate to count Lilian Katz as a member of our group, and she has been kind enough to raise questions in an introductory challenge that have helped deepen our understanding as we viewed project work throughout the day.

- Take suggestions from the group for topics to be discussed at lunch. Post these topics, and let people sign up for their lunch discussion group as they leave the opening gathering. Lunch discussion topics suggested by the group at our most recent meeting included topic selection, project work with toddlers and 2-year-olds, getting started in project work, project work in part-time programs, and fieldwork.
- Provide at least one hour for viewing of the projects. An hour may seem like a long time, but participants in our spring 2000 meeting suggested that in the future we allow at least 1-1/2 hours for this viewing. We've found that teachers who bring projects for display often feel compelled to stay with their work and answer questions. To help these teachers take advantage of the project viewing, we've assigned each presenter with a time when she or he is free to view documentation of other projects and a time when he or she is expected to remain with his or her own work and answer questions.
- Provide a simple lunch that participants can take to their lunch discussion table.
- This year, we divided up for discussions after lunch, based on the ages of the children we work with. In advance of the meeting, members of our leadership team had volunteered to lead these discussion groups. Members were invited to take a chair from a rack of folding chairs and join the group that interested them most. Groups at the most recent meeting discussed project work with toddlers and 2-year-olds, preschoolers, and school-aged children.
- Gather the group at the end to generate suggestions for improvement for the following year.
- Invite participants to join in the leadership and growth of the group.
- Develop a notebook to pass on to the host of the next meeting. Include samples of past flyers and brochures, a time line for preparation, names and addresses of past attendees, and other information that you think might help future meetings run smoothly.

## Bringing Together a Diverse Group

The meetings of the Illinois Project Group have continued to grow because they have provided an opportunity for educators from a broad continuum of knowledge and experience to enhance their understanding and skills by sharing. For example, Amanda, a student in our 2-year college program, was amazed to see real project work. She said, "I've learned about project work and documentation in class, but I just didn't believe that so many people really do it. It was cool to see the displays. It made it all seem real to me."

College Instructor Donna Banas brought a group of students from Morraine Valley for the spring 2000 meeting. She found that

> the project meeting was well worth the time. I wasn't sure if I was asking too much of my students to spend an entire Saturday on project work. My entire class participated. Discussions as well as the quality of work improved after the meeting. I was also recharged after viewing the projects and participating in the discussion groups. It would be valuable to host periodic meetings locally as well.

Kindergarten teacher Candy Ganzel travels a long distance to attend the Project Group meetings. She states,

> I come from Indiana to go to the Project Group meetings because very few teachers are doing projects in Indiana. I always feel I get many great ideas on topics and documentation. I also see how others display their work. I feel very welcome and a part of the group. Everyone is so willing to share. I always come home motivated and ready to try something new!

Preschool teacher Scott Brouette believes

> the most important and informative part of the day is looking at the different projects and talking to the participants about their projects. Finding out what worked and what didn't and seeing the different topics was very interesting. Also the group discussions by topic were very helpful. It is nice to hear what others are doing and how they have overcome obstacles, and which way a topic went from beginning to end.

Likewise, Pam Scranton, part-day preschool teacher, believes that the best thing she gets out of those meetings

> is the chance to talk with other teachers encountering the same kinds of problems/successes that I do in my daily teaching and project work. Although I love talking theory, brain research, documentation, etc., I love talking with teachers who are engaged in the same activities/project work that I am. It's hard "talking shop" with other people who have no idea what I mean! Also, I love studying the project displays and getting ideas from my peers. Lastly, those small discussion groups are great, because it lets us talk about specific challenges and get other teacher's ideas/opinions.

From her perspective as a Head Teacher in a campus child care center, Barb Gallick believes it is

> the sharing of ideas that works so well at the Project Group Meeting. Everyone is very accepting of everyone else's ideas and willing to brainstorm to help when someone has a question. I think this comes from the common interest in project work. The feeling is always present that everyone there values what you do. I believe that some of the teachers who come to the Project Group Meeting might not feel that in their own school where they may be considered the different one. So the Project Group Meeting really serves as a stimulation to continue with project work.

On a personal level she enjoys

> seeing all the different interpretations of project work. It helps me validate my feelings that existing in a learning mode is okay. I feel that I learn more with each project we do and seeing how others work through a project and document a

project helps me evaluate my own growth as a teacher striving to understand and use the Project Approach.

## Getting Started

Educators who would like to start a Project Group in their own state may benefit from considering some of the aspects of the Illinois Project Group meetings that were particularly valued by participants. They may be able to adapt the meeting format that has proven so successful for us and begin to meet with others from around their state who share an interest in project work.

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## Guiding Teachers Step by Step: Inservice Training Experiences

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One of the ways teachers can learn how to guide projects is through training experiences brought into their early childhood center or school. These experiences differ from other ways of learning to guide projects in that they are part of an institutional initiative and thus are sanctioned by administrators and decision makers in their organizations. This sanctioning encourages teachers to implement what they are learning. The administrator often provides additional support in obtaining materials, arranging for funding for field site visits, and providing on-site encouragement. This approach to learning how to guide projects results in a high number of teachers continuing implementation the following year. An example of this method is the Rockford Schools Early Childhood Program where teachers were provided inservice training over a period of 3 months for the purpose of learning to implement the Project Approach.

A variation of this approach to training is having an organization such as a resource or referral organization, or a large school system, provide a series of workshops spaced out over a period of 2 to 3 months. These training workshops also provide guidance throughout implementation of a first project. Teachers in these programs often select the Project Approach training as an option for professional development. For example, Child Care Connection, a resource and referral office in Peoria, Illinois, provided several series of classes on the Project Approach in which teachers of pre-kindergarten through third grade studied the Project Approach.

### Facilitators and Participants

Facilitators for experiences such as those described above are often educational consultants who have guided projects with children and have participated in Project Approach training. Teachers who are successfully doing projects in their classrooms are also often able to facilitate this type of experience, especially if they use written materials for reading and discussion. Videos are also available that can help teachers understand the Project Approach process. The availability of a committed and supported teaching team and an enthusiastic teacher-facilitator on site can often make up for lack of advanced experiences and expertise regarding implementation and documentation.

Participants benefit from hearing other participants share their challenges and solutions as they participate in the class and guide projects in their classrooms. Other participants provide support and encouragement as well as participate in generating solutions to problems and discussing issues. Sometimes these experiences are provided for a group of teachers within a narrow age range such as pre-kindergarten teachers. However, these on-site sessions are just as likely to include the staff of a whole school, which results in an age range of 6 or 7 years. Although this arrangement may at first appear to make it more difficult to share and discuss experiences, the Project Approach process is easily adapted to a wide range of children's abilities and skill levels. The discussions of teachers who teach a wide variety of age levels of children can enrich understanding of the other participants.

An advantage of having Project Approach training on site is that teachers communicate easily with each other between inservice sessions. This support is especially helpful when a consultant providing the training is only available at the time the inservice training experience occurs. Group support can keep enthusiasm going.

## Scheduling Training

An effective schedule for on-site inservice training on the Project Approach follows the probable progression of projects in the classroom for the teacher who is just beginning to do projects. A sample schedule shows the spacing of the sessions and the focus of these sessions:

| | | |
|---|---|---|
| Week One | Meeting One | Introduction of the Project Approach and phases. |
| *Follow-up in classroom* | | *Participants observe children in their classes to get ideas for possible topics.* |
| Week Three | Meeting Two | Participants share observations.<br>Introduction to topic selection and webbing. |
| *Follow-up in classroom* | | *Participants observe children and select a topic.*<br>*If a topic emerges, begin phase one.* |
| Week Six | Meeting Three | Participants share where they are in their projects.<br>Introduction of investigation techniques, use of experts, and field sites. |
| *Follow-up in classroom* | | *Participants who are ready move into phase two; some participants may continue phase one.* |
| Week Nine | Meeting Four | Participants share where they are in their projects.<br>Introduction of phase three, culmination. |
| *Follow-up in classroom* | | *Participants move into phase three, if ready.* |
| Week Twelve | Meeting Five | Participants share documentation of their projects (not all projects will have reached culmination).<br>Discussion and reflection on project process. |
| *Follow-up in classroom* | | *Culmination and documentation of all projects.* |

Because project direction and the length of the phases of the project are determined by children's interests, timing of projects is difficult to predict. By providing written materials on the project and then spacing Project Approach training over 12 weeks, most teachers will be able to benefit from support and instruction as they guide their first project.

It is important to schedule these training sessions with an understanding of the flow of the school year. Teachers often begin the school year with mini-projects or do project-like activities to teach some project skills. Projects often begin to emerge near the end of the first month of school, so a fall series of inservice training sessions works well if projects also begin about that time. This timing also enables many projects to reach culmination before a winter break. During the spring, it is important to begin the series early enough so that all projects can culminate before the end of the school year. Of course, in year-round schools, these considerations are less relevant.

### Follow-up Support

Teachers who participate in the inservice training usually develop a sense of camaraderie and shared adventure. The groups that emerge from these inservice training experiences should be encouraged to continue to support each other through the project process. One technique is to have a fall group reconvene in the spring to share the results of a second project. Some schools also develop monthly project sharing sessions where documentation can be discussed and problems can be addressed.

### Celebrating Accomplishments

Having a project night where projects are displayed is a very practical follow-up activity for project groups located in one school. Parents can come and view documentation for all the projects, not just the projects in which their children participated. This activity provides a purpose for finalizing project documentation for display. It also provides an opportunity to celebrate the success of not only the students but also of teachers who have worked hard to learn how to implement the Project Approach.

## Helping Teachers Learn: College and University Experiences

**Eileen Borgia, Sylvia C. Chard, and Tom Drummond[1]**

### Introduction

Helping teachers and student teachers to implement the Project Approach as part of their own teaching presents many challenges. Because the Project Approach is not a tightly scripted set of techniques, it cannot be learned from a cookbook-style resource or a "kit." Rather, it requires the kind of insight and understanding most likely to be gained by teachers and student teachers undertaking project work themselves. In this chapter, we discuss some of the strategies we have used with adults. On the basis of simulations in which participants proceed through the three phases and five structural features of project work (Katz & Chard, 1989), they can begin to understand its potential value and acquire strategies for implementation with their own students.

### Principles and Strategies

Our extensive experience of working with students and teachers suggests that simulation of the Project Approach is one of two effective ways to learn to use it. Another effective learning strategy is to have a mentor who works alongside the teacher during the time project work is being implemented in the classroom.

In both cases, we usually begin with an introduction of key principles and visual examples of actual projects and then get the teachers and students launched on phase one. In phase one, we help participants to select a topic that they can investigate in some depth at their own level, within the time frame of the course. We employ the three-phase structure whether the training is provided in a workshop or in a course lasting several weeks or months. Course participants review their own personal knowledge of the topic and experiences related to it and then compile lists of questions their investigations will try to answer. Next, they represent their collective ideas in a topic web, make preliminary plans for fieldwork,

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Dr. Eileen Borgia teaches at Illinois State University, Normal, Illinois. She created a 2-week 3-credit-hour summer course on the Project Approach for teachers. She also built an early childhood curriculum course around the Project Approach and has offered many 1- and 2-day Project Approach workshops around the country and introduced Dot Schuler to the Project Approach during a summer course.

Tom Drummond is an instructor in Early Childhood Education at North Seattle Community College and an Adjunct Professor at Western Washington University in Bellingham, Washington. He offers courses on Kindergarten and Primary Education at the Everett Extension Campus, Everett, Washington, in the elementary education certification program at Western Washington University.

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and compile the lists of questions they will use during their investigations in phase two. For many participants, the Project Approach course might be their first experience of planned collaborative learning. We provide an opportunity for them to step back from their usual leadership role and follow, collaborate, negotiate, and sometimes lead.

In the second phase of project work, opportunities are provided for the fieldwork. In semester-long courses, the fieldwork is usually conducted between scheduled course meetings. The activities included in phase two usually include site visits, interviews of relevant experts, experiments, and other strategies by which to find answers to the questions compiled during phase one. As the participants become involved in their project work, they begin the processes of conveying what they are learning by using a variety of media as a means of representation.

For the third phase of their projects, the culmination phase, the participants prepare and present displays documenting what they have learned during the project. During a concluding discussion, participants also share reflections on their experiences in the course as well as their plans for beginning their first project with children.

## College and University Approaches

The goal of the course on Kindergarten and Primary Education, offered in Everett, Washington, is to synthesize both an understanding of how the Project Approach can be used to engage all children in inquiry-based curriculum and how to meet or exceed all of the external competency attainment guidelines imposed on a lower elementary program. In addition to enrollment in this course, all the class members were enrolled in a 2-credit Literacy Practicum in local elementary schools. In that practicum, each class member was assigned two children selected by classroom teachers as most likely to benefit from extra help with reading. The preservice students met once a week with these children, assessed their reading competence, and designed learning experiences based upon the children's needs. Class members also used this experience for their first attempts at implementing the Project Approach with children.

Throughout the class, the participants were provided with a visual and written record of their own experiences. The class especially explored two ideas often thought to be in conflict: (1) the detailed, public assessment of children's basic competence at academic skills, and (2) the natural unfolding of inquiry-based learning through the Project Approach. Preservice students discovered the children's excitement about the projects as they developed literacy and numeracy skills in the pursuit of their own interests and expressed what was personally significant to them. In the display at the 2000 NAEYC conference, documentation showed the class members' discovery of how naturally the Project Approach integrated their own dreams while still addressing the formal academic demands of a public school classroom.

All the course features described here were integrated in one 3-credit course that met for seven 4.5 hour sessions. The class members used Chard's *Practical Guides to the Project Approach* (1998) as required course texts. The students' own interest in what they ate for their daily snack became the topic for a project. They already had considerable knowledge of "snack food," but studying the topic in depth in class demonstrated how the Project Approach worked for them at the adult level by enabling them to learn more about the food they ate.

Another kind of university experience is a 2-week, 3-credit-hour summer course for practicing teachers at Southern Illinois University at Edwardsville. The participants were deeply involved in investigating, seeking information from experts, experimenting, drawing, interviewing colleagues, and so forth. Displays and other aspects of the culminating event were prepared with enthusiasm and careful attention to aesthetics, refreshments, and invitations. The participants dressed professionally and invited fellow students to view the displays.

During one such culmination, a graduate class studying curriculum issues attended the culmination. The participants in the Project Approach class described their projects and interspersed comments reflecting their understanding of the philosophy underlying project work. A lively discussion followed as the members of the two classes exchanged views about the underlying principles and their related philosophies. Afterward, the professor of the visiting class commented that the culmination and discussion were precisely what he had been trying to convey to the students in his class. The event proved to be an intellectually stimulating seminar as well as a fruitful culmination for both classes.

In this course, the teachers' competence and vision, naturally being more advanced than those of the children, frequently resulted in quite sophisticated documentation. For example, for a project on a wetlands reserve, one first-grade teacher sketched a map of the wetlands that her group had investigated. She re-created a map of the pathways and geological features of the wetlands reserve by sewing fabric scraps together. Another group used fishing line to suspend a series of photographs on a mobile that depicted a time line of the development of the reserve. Another group videotaped an interview with an expert on gardening. Taking responsibilities for different kinds of representation at their own level in the context of the course helps teachers understand how various media can help children represent what they have learned.

At the University of Alberta, a semester-long graduate course is offered for inservice teachers on the Project Approach in Early Childhood and Elementary Education. With a full semester available, the teachers are introduced to various supplementary readings to be completed alongside the practical work. In addition, the teachers undertake planning and evaluation on a weekly basis and give each other moral and practical support as they implement their first projects. Help is also offered in class with learning the processes of documentation. At the close of the course, the students share their experience they had of implementing projects in their own classes by presenting display boards with photographs, captions, samples of children's work, and narrative descriptions of the project work. The reflections of the teacher, parents, and children on their learning experiences are represented in the documentation. Others who have been part of the project work—the school principals and visiting experts—are invited to the class for the final presentations during phase three—culmination. Where possible, course participants are encouraged to feature their projects on school or center Web sites.

## Summer Institute

Another university-sponsored training experience is the 5-day Project Approach Summer Institute titled "Engaging Children's Minds," at the University of Illinois's Allerton Park. This institute is an annual residential seminar during which the participants experience intensive immersion in all aspects of project work. Some participants elect to earn graduate credit for the participation by preparing detailed reports of projects they conduct in their own classrooms upon return to their schools. These reports have revealed some interesting and moving stories of successful project work that the teachers attempted in their classrooms by implementing what they had learned at the Institute.

## Online Course

This year, the University of Alberta launched an online certificate course on the Project Approach from the Project Approach Web site (www.project-approach.com). The participants in this course complete readings both online and from texts and complete and report on a project conducted in their classrooms.

## Conclusion

The Project Approach can be easily integrated into preservice and graduate coursework in colleges and universities. Whether a training session lasts for one day or a semester or whether participants simulate a project as adults or experiment within their own classroom, project work must be done well. Course leaders will recall the cautions of Lilian Katz, who frequently reminds us that projects can only serve the needs of teachers and learners if they are well done.

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## *Section 3*

# The Project Approach on the Web

# Methodology in Activity: Two Examples of Long-term Projects

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*This chapter was excerpted from an article that appeared in the spring 2000 issue of the Internet journal* Early Childhood Research & Practice. Early Childhood Research & Practice *covers topics related to the development, care, and education of children from birth to approximately age 8 and regularly publishes project descriptions. The original article, "Dynamic Aims: The Use of Long-term Projects in Early Childhood Classrooms in Light of Dewey's Educational Philosophy," explores the use of the long-term project as an educational tool in early childhood classrooms. In particular, it focuses on the way in which long-term projects can reflect John Dewey's notion of the "dynamic aim" as a primary force in education. The article concludes with examples of long-term projects partially based on the Reggio Emilia approach from two American classrooms—one infant/toddler and one preschool. This chapter contains these project descriptions. The full article can be read at http://ecrp.uiuc.edu/v2n1/glassman.html.*

In order to better portray some of the ways long-term projects can be used as part of an early childhood education curriculum, we present two examples with two different age groups. The first project we present is based on preschoolers' interest in shadows. The second project involves infant/toddlers' interest in construction. The classrooms we discuss in this section are different from those in Reggio Emilia in some fundamental ways. First, these classrooms are in the central United States rather than northern Italy. The teachers and the children bring very different everyday concepts to activity from those that might be found in the Reggio Emilia ecology. Although we believe that these classrooms and the Reggio Emilia classrooms were working within very similar versions of what Vygotsky (1987) termed "scientific concepts" of education and the long-term project, these scientific concepts interacted with different everyday concepts. The differences may have been even greater because these classrooms were part of a university laboratory school. Both Reggio Emilia teachers and the teachers described here believe it is important to take the children out into a larger "natural laboratory," but Reggio Emilia teachers use the city as a laboratory, while the teachers in the school described here use the sprawling campus of the university.

Second, the classrooms discussed here were mixed-age classrooms rather than single-age classrooms. Mixed-age classrooms present certain difficulties and certain advantages in project development that may be apparent in our descriptions. Third, the infant/toddler example involves age groups much younger than are usually found in discussions of long-term projects. We feel that involving even very young children in project work is highly representative of Deweyan philosophy in that it shows the seamless thread of lifetime education. Long-term projects are meaningful for the youngest and the oldest possible students because the projects emphasize the process of education rather than the content.

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The descriptions of the projects that follow were derived from a variety of sources. Teachers in both classrooms regularly kept informal journals and notes about activities that occurred in their classroom. These notes were used to reconstruct the descriptions of each of the projects. In addition, small tape recorders were used to record conversations between children during the course of their activity. These tapes were then transcribed and were used as a data source.

Documentation panels comprised of the text from teacher notes, conversations between children (or a combination of both), and photographs of the children's activities were also utilized for these descriptions. In the infant/toddler classroom, the documentation for the construction project took the form of several "big books" that teachers, children, and parents could revisit in the same way they would read through any book. These books also included transcripts of conversations between parents and children in the classroom taken from the small tape recorders that parents took with them in their cars on the drive home. In addition, these books included documentation by the parents concerning their children's interests in construction that parents had observed at home. Documentation of the preschool project was completed on individual panels and by taking slides that could be shown in the classroom. Thus, both the teachers' and the children's voices are interwoven throughout the descriptions that follow.

## Shadows in the Tent

The preschool class (20 children, 3-5 years of age) was interested in camping. The teachers had introduced a class camping trip to bring the families closer together as a community, and the teachers decided to follow through on the children's interest. The children mentioned that they wanted to put up a tent in the classroom and bring in flashlights just as if they were on a trip. They believed that flashlights were something you had to have while on a camping trip. The teachers encouraged this activity, expecting that it would lead in the direction of dramatic play involving camping. While the children were playing with the flashlights inside of the tent, they began to notice the shadows that they were creating on the ceiling and the walls. Soon they were moving their heads in front of the flashlight to create more interesting shadow effects.

The teachers noticed the intense interest that the children were showing in the shadows. These events coincided with some beautiful autumn days, so they decided to take the children on some "shadow walks" around the campus. The teachers were very aware of the questions the children were asking with their eyes and their bodies as they suddenly became more aware of the shadows they were creating. There was interest in a natural phenomenon that had not been there before (or at least had not been expressed).

The teachers combined the walk with a number of "challenges" to the children to help guide their natural interest. The addition of challenges is, in many ways, a subtle method of introducing discipline into interest. The children are encouraged to take their interest and use it to achieve an aim. The challenges become progressively more difficult, one building on the other, so that children are both successful in achieving aims and in realizing that one aim immediately leads to another activity and another aim. The teachers gave the children a number of challenges:

- Think about where your shadows would be. Go to a place where you think you'll see your shadow, where you think you won't see your shadow.
- Try and make your shadows touch (Fig. 1).
- Try and make your shadows touch without your body touching.

The challenges helped the children to become engaged in the activity as an aim-driven activity rather than as simply an interest-driven activity. The aims came directly from the activity, and they caused the children to develop their own aims such as "making the shadow be in front of you" and "making the shadows be in back of you."

After the walk, the teachers moved to small group work. Small groups are part of the Reggio Emilia philosophy on group projects (Malaguzzi, 1998), but small group work in this preschool pre-dated knowledge of the Reggio Emilia program. One of the reasons for small group work in this classroom is the disparity in developmental levels of the children in the mixed-age classroom. Small group work is meant to limit differences in the children's zone of proximal development (Vygotsky, 1987), but it also limits the degree to which older children can serve as mentors to younger children. It is difficult to know how Dewey would view small groups based on developmental differences. Dewey (1916) was a strong champion of both diversity and maintaining a "real-world" atmosphere. Schools are one of the few places that artificially segregate by age.

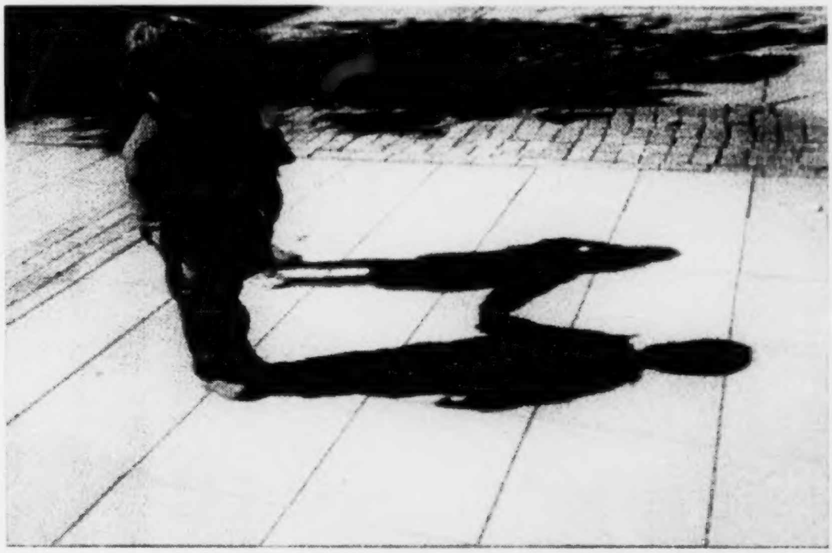

Figure 1. The children held hands to make their shadows touch.

Two groups of approximately four children each were created to work on discussions and to explore the potential for more difficult, discipline-based problems in the activity of interest. The two groups were divided according to age and developmental abilities. The younger group (which was completely male) used documentation from the class shadow walks to spur interest. Pictures of the walks were put together in a book along with observations the children made about their shadows. The teacher in charge of this book was able to use the combination of the pictures and the children's own words to help them develop questions, ideas, and interests.

The question in which children showed the most interest was whether shadows could move. The children decided that some shadows could move and some shadows could not move. The teacher took the children outside again, but this time, instead of observing their own shadows, the children observed the shadows of other things. The aim became to see if shadows of different things could move. The children found shadows that they thought were permanently fixed, and they made chalk drawings of the shadows. They then revisited the chalk drawings and were able to conclude that the shadows moved while they were away.

The achievement of the aim naturally led to another activity involving the movement of shadows. The children in this group returned to making shadows with artificial light. The teacher set up a spotlight and challenged the children to make shadows with their own things. The teacher expected the children to become interested in the size or the intensity of the shadows. Instead, the interest turned social, with children becoming interested in layering each other's objects (e.g., using shadows to put a tail on an object by layering two objects against the light). The friendships of the children came into play, and they became more interested in working together to create different shadow patterns than the shadows themselves. There was a discussion about the content of the shadows. One of the younger boys suggested that shadows have bones, but he was quickly convinced by his friends that they do not.

The second group was composed of more developmentally advanced children. There were actually two groups—an older mixed-gender group that was shown the same documentation as the younger group, so that they had a chance to cement their thinking and suggest directions for further exploration, and a completely female group that engaged in activity based on those conversations.

The teacher had the children draw pictures that represented shadows. From the drawings, there was a discussion on where the shadows would be in relation to people. The teacher leading this group took a piece of paper and split it down the middle. On one of the pieces of paper, she put a shadow, while she left the other one blank (Fig. 2). On the paper with no sun, the children drew no shadows or shadows that could barely be seen. The teacher then built a bridge with toy building blocks and challenged them to draw a shadow (Fig. 3). The children drew the shadows as if they were coming towards them. The teacher asked what would happen if the sun moved, but this concept was too confusing for the children. The children lost interest in the project. The teacher, feeling that there was nowhere to go with the project without the children's interest, decided that there was little to be gained in pursuing shadow issues at that time.

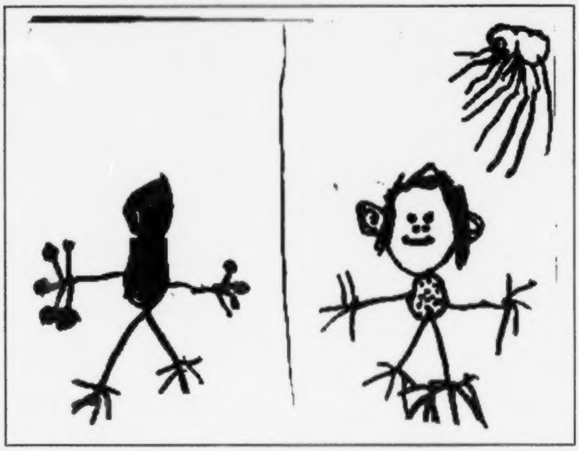

Figure 2. A child's drawing of a shadow.

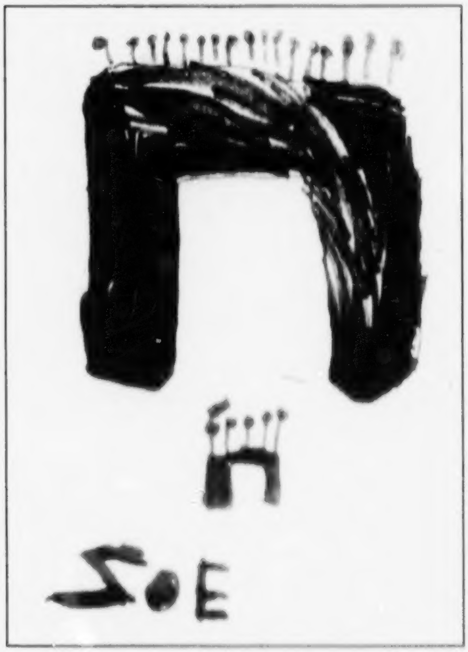

Figure 3. A child's drawing of a shadow of toy building blocks.

## Constructing Construction

The playground for the infant/toddler class (10 children, 6 weeks to 3 years of age) was being torn down by the city in order to replace sewer lines that ran underneath the area. The playground, which had been an important part of the everyday lives of the children, became a full-fledged construction site. The teachers and the children often passed the construction site on walks or as they came into and left school. One of the oldest students (2.7 years) would stop by the construction site each day with his father and then come in and talk about it with his classmates. The teachers, noticing the interest that the children were showing in construction activity, brought more blocks and small construction vehicles into the classroom. The older children in the classroom began carrying vehicles around, showing them to the younger children and telling them what they were ("Gack-o's" for backhoes and "Bull-D's" for bulldozers). The children also started incorporating the vehicles into activities at the sensory tables, bringing them to the lunch tables and parking them close by during nap time.

The teachers took a twofold approach to the children's burgeoning interest. They took the children on a number of walks, both to the original construction site and to other construction sites around the campus (Fig. 4). They also engaged in a form of *progettazione*. There was an interesting difference between the way the infant/toddler teachers used *progettazione* and the way it was used by either the Reggio Emilia teachers or even the teachers in the preschool classroom. The teachers developed planning sheets to track their brainstorming about the project based on their observations of the children, and they then used these sheets to guide planning and discussion. What is different about the infant/toddler classroom is that the teachers seemed to focus much more on materials. The materials would elicit interest from the children, and the interest would guide the activity. The teachers would introduce materials such as plaster of paris or popsicle sticks into the environment, or arrange rides for the children in vehicles, and then see how the interest, if there was interest, drove them into some type of disciplined activity.

The disciplined activity emerged as a construction site developed solely through the actions of the classroom children themselves. The children started the site on their private courtyard (Fig. 5), and while the teachers brought in some materials, they encouraged the children to ask for what they thought they needed. The children began to ask for the same materials they saw on the construction sites they visited; they wanted yellow construction tape around the site and wore hard hats and gloves while they worked (Fig. 6). The children were establishing through their own activity a merging of interest and discipline. The older children externalized this merging by drawing the younger children into their activity, showing them the materials and talking to them about what was happening.

Figure 4. The children visited a construction site on campus.

Figure 5. The children developed their own construction site.

The teachers continued to take the children out into the world, visiting construction sites and talking to the workers. The teachers documented much of the project with pictures and videotapes, creating large portable books of the children engaged in different activities. The children were able to take the books home and to discuss them with their parents. This strategy helped to create a second line of interest where children interacted with their parents. Many of the parents reported having long conversations with their children concerning construction, creating a second line of discipline as well. The teachers brought the parents into the documentation process by offering them the opportunity to borrow the small classroom tape recorder and the classroom camera so they could record conversations in the car and stop to photograph construction sites in their own neighborhood. The documentation by the parents was melded with the documentation by the teachers. The interaction between the two types of documentation created further excitement and interest when the parents and children saw things that "belonged" to them displayed in their documentation. One child went as far as to develop his own construction site in his living room at home.

The project took a number of twists and turns that the teachers did not expect. Near the end of the project, some of the children started to become interested in baseball. The teachers expected the children to move on to other interests. Instead, the children combined their interests, first building a baseball parking lot on their still-active construction site and later building a baseball field. After about 6 months, one of the children came into the classroom and said the teachers had to go out and take a picture "Now!"—the construction project on the playground was complete. Soon afterward, the children completed their own construction site in the courtyard. The construction fence came down, the signs were put away, trucks came back in, and the construction was complete.

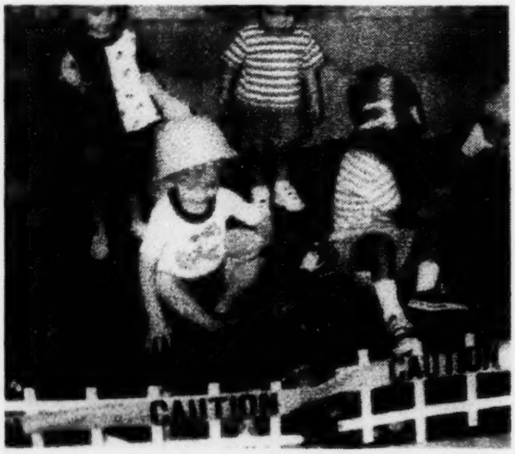

Figure 6. The children asked for the materials they saw on the construction sites that they visited, including hard hats.

## Discussion

The use of long-term projects in the curriculum can be very useful, especially in bringing many of the educational ideals that Dewey envisioned to fruition, but it is fraught with perils and demands great attention and energy on the part of teachers. The teachers must, in a sense, become learners along with the children. The teacher has to be careful to not act as a mentor but as a guide; that is, the teacher cannot think solely in terms of a prearranged destination to activity but must focus on offering a sense of discipline to the activity. *Progettazione* offers an interesting variation on Dewey's proverbial "lighthouse" (i.e., the teacher sets up the lighthouse to help guide the activity of the student). The lighthouse itself sets a destination, but it also illuminates enough area that students may find port in a different, unanticipated place. Teachers should direct a wide beam of light in their attempts to illuminate areas where children might find their aims. They must be flexible enough to accept the aims that children find through their own activity. In Dewey's (1916) developmental framework, it is young children who are better able to find the interest even in the seemingly most mundane materials and activities; it is the adults who are able to infuse these activities with discipline so that they maintain the momentum that allows for discovery. Children and adults should be able to use each other's strengths in the development of activity, to feed off of each other and become co-creators in true joint activity.

One of the reasons joint activity where the teacher acts purely as guide is so difficult is because teachers so often want to be mentors. The idea of mentorship is prevalent in many aspects of social relationships in our society. We believe that parents should teach children the right way to do things, that teachers should teach students the right way to do things, that managers should teach subordinates the right way to do things. It is difficult and frightening to escape the notion of teacher as mentor, especially as children move into society. Both consciously and unconsciously, we think it is the teacher's role to offer the neophyte the particular types of knowledge that will allow him or her to succeed in the larger social milieu (Vygotsky, 1987). This assumption is apparent in the two examples from the university preschool offered above. The long-term project in which the teachers were most successful acting as guides, rather than mentors, was conducted with the youngest children. The teachers genuinely became co-learners with the children, exploring topics that neither of them knew very much about. It was the children who had complete control of the activity. The teachers maintained discipline and were able to set up parallel relationships that engendered discipline (with the parents) through documentation. But the children's interest had so much control over the direction and the aims of the activity that even *progettazione* was primarily concerned with materials that could elicit aims, rather than aims themselves.

The older the children got, the more difficult it seemed to become for the teachers to maintain a non-mentor/guide relationship with the children. The younger children in the preschool shadows project were able to maintain moderate control over their activities. But the teacher of the older group of children seemed somewhat intent on bringing the children towards a specific destination through activity. The differences became apparent in how quickly the children lost interest in the projects as the teacher became more intent on instilling not only discipline but destination.

This discussion leaves some important questions that educators need to ask themselves in using Dewey's philosophies or long-term projects in their classrooms. Is the guide relationship between teacher and child possible with older children? If it is not, is the reason social/historical, or is it the result of the ontogenetic development of the child? Are teachers unable to take a guide approach to the education of young children because non-mentor teaching relationships are so rare in the everyday activity of our society (Vygotsky, 1987)? Or does the development of the thinking of the child force teachers into a mentor-like relationship?

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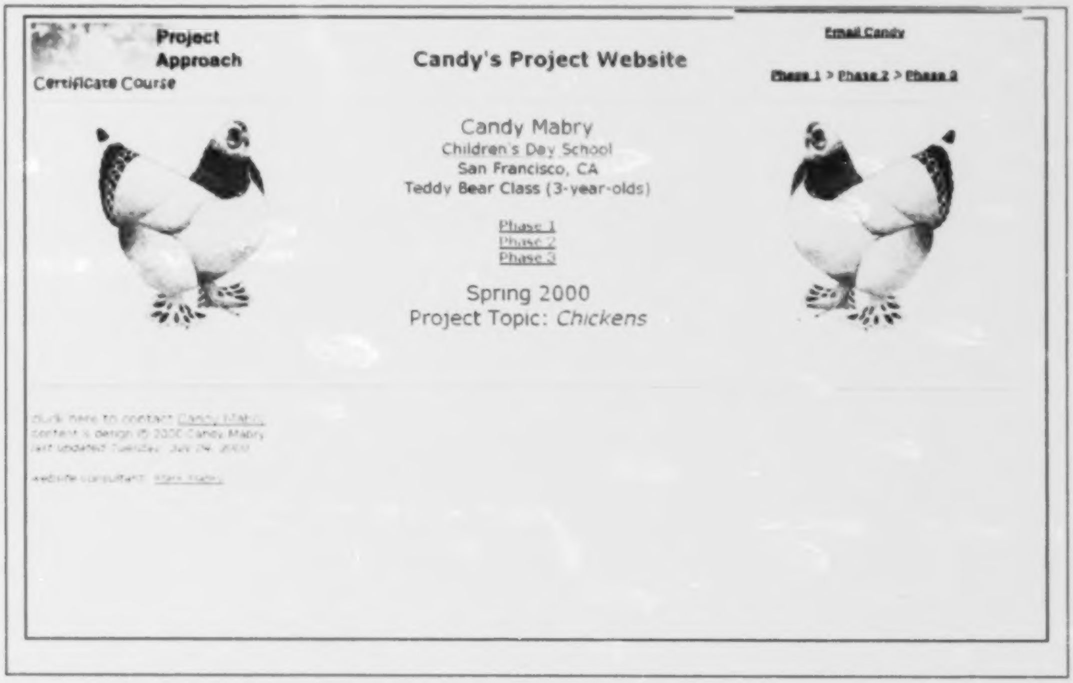
## Chicken Project Web Site

**Candy Mabry**
Children's Day School, San Francisco, California

Learning how to document what children are learning is an important part of guiding projects with children. Children benefit from seeing their work taken seriously by adults. They see themselves as investigators. Parents benefit from knowing what children are learning and how they learn. Their image of their own children changes as they become more aware of their ability to question, investigate, and form hypotheses. The more they know about what their children are learning, the more they are able to interact with them about the topic.

Many teachers are beginning to take advantage of technology in sharing documentation. Because schools and child care centers are beginning to develop Web sites for parent use, teachers are experimenting with sharing project documentation through the Internet. The following pages present the work of Candy Mabry and the Chicken Project, which took place in her classroom (http://www.stanford.edu/~msmabry/cproject/index.htm). Mark Mabry assisted in the Web design.



Candy's Project Website

Candy Mabry
Children's Day School
San Francisco, CA
Teddy Bear Class (3-year-olds)

Phase 1
Phase 2
Phase 3

Spring 2000
Project Topic: *Chickens*

click here to contact Candy Mabry
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last updated Tuesday, July 24, 2001

website consultant: Mark Mabry

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**Project Approach**

Certificate Course

## Candy's Project Website

Email Candy

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### Teddy Bear Class - Spring 2000

*Chickens*

### Phase 1: Starting the Project

Our chicken project began in early April because of the interest my son showed in catching one of the chickens on the school's farm. He became very proud of being the first child in the school to be able to catch a chicken and was thrilled to be able to share this accomplishment with his father's preschool class who was doing a project on chickens. I told my class of three-year-olds (the "Teddy Bears") of my son's chicken catching abilities and shared photos with them. We started having my son catch the chicken and bring it into the classroom every day, and so our chicken project "hatched".

The children had little experience with chickens outside of school, and upon seeing a chicken in the classroom they immediately began their lists of wonderings and of knowledge.

*What we know about chickens*

- Jackson - Chickens have big claws.
- Cassi - The chicken is a girl. She lays eggs.
- Clare - She sleeps in the classroom.
- Cheyenne - The chicken is a girl.
- Camilla -They have long nails.
- James O.- She's a girl.
- Griffin - She has a rolly face.
- Miranda - The chicken is a mommy.
- Ella - Chickens eat corn.
- DeAndr e- They drink water and eat snails.
- Libby - It's a girl.
- Sophie - Chickens have feathers.
- Leyla - Chickens lick rocks.
- Ms. Amber - Chickens eat oranges.
- James O.- The chicken has brown eyes.
- Will H.- The chicken has wings.

*What do you wonder about the chicken?*

- Leyla - Is it a girl?
- Matthew - Does she have wings?
- Libby - Why was she getting scared?
- Will T. - Does she have wings?
- Camilla - Does the chicken use pencils?
- Ms. Candy - What do chickens eat?
- Miranda - Do they eat flowers?
- James O. - Do chickens eat chicken soup.
- Leyla - Does she wear socks?
- Celeste - She has red things between her mouth. What are they?
- Clare - Does she lay her eggs in a nest?
- Ella - Why is she asleep near our art file?
- Matthew - Can the chicken drive a race car?
- Kalea - Does she lay eggs?
- Clare - I think the chickens lay eggs and put their babies in them.
- Camilla - Did the chicken crack out of an egg?

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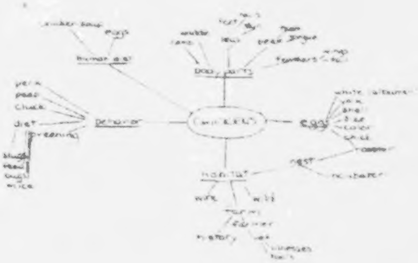
It was at this time that our teaching team sat down to brainstorm our topic web.


chicken soup
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body parts
feathers
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diet
preening
chickens
eggs
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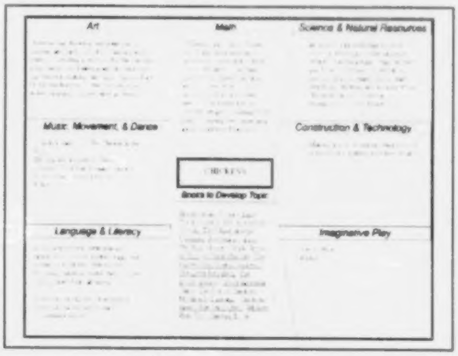
shell
size
color
nest
habitat
history

click to enlarge

We also took the time to come up with a curriculum web as well. We were pleased to discover that we theoretically had a topic that would lend itself nicely to a variety of activities across many developmental areas. This web by no means represents what we will be doing with the children, but it did help us to know that our topic had a great deal of potential.



Art

Math

Science & Natural Resources

Music, Movement, & Dance

Construction & Technology

CHICKENS

Ideas to Develop Topic

Language & Literacy

Imaginative Play

click to enlarge

The one thing that the children all knew was that chickens lay eggs, because in past months we had gathered eggs from the farm for cooking projects. The children anxiously waited for the chicken to lay an egg in our class and when they learned that chickens do not like to be watched when trying to lay, the children decided that a nesting box would help. They worked on decorating a box.

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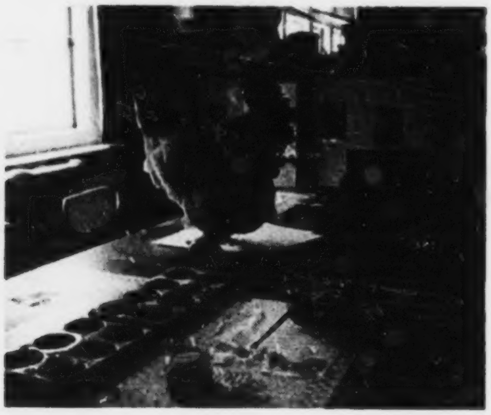
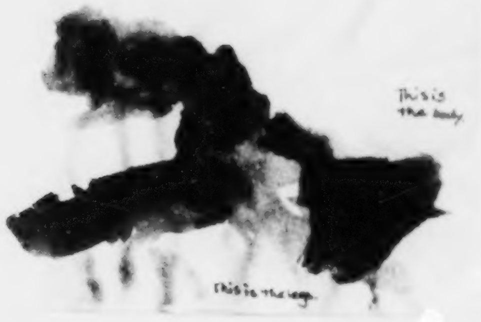
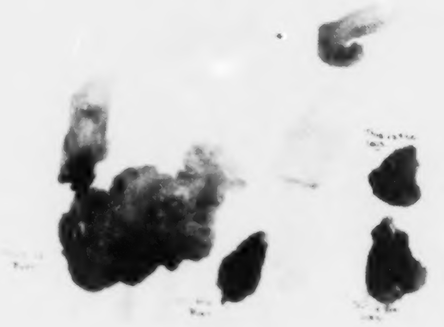
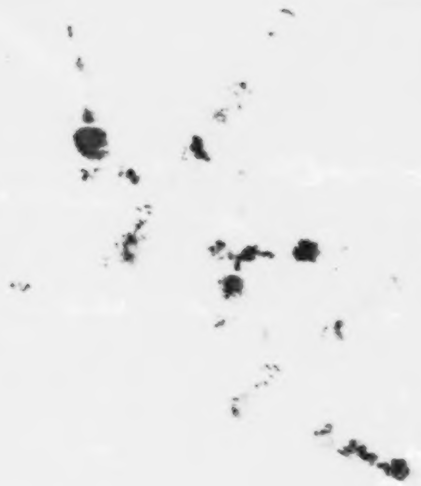
Many of the children have created books and paintings about chickens and eggs. Some have taken advantage of the fact that the chicken likes to sit on the art table to make observational drawings and paintings.



Some of the children work well on their own and others benefit from a teacher talking them through the process by offering a starting place ("Would you like to start with the feet or the head?") or even narrowing down the observation ("Do you want to draw the whole chicken or a part of the chicken?").

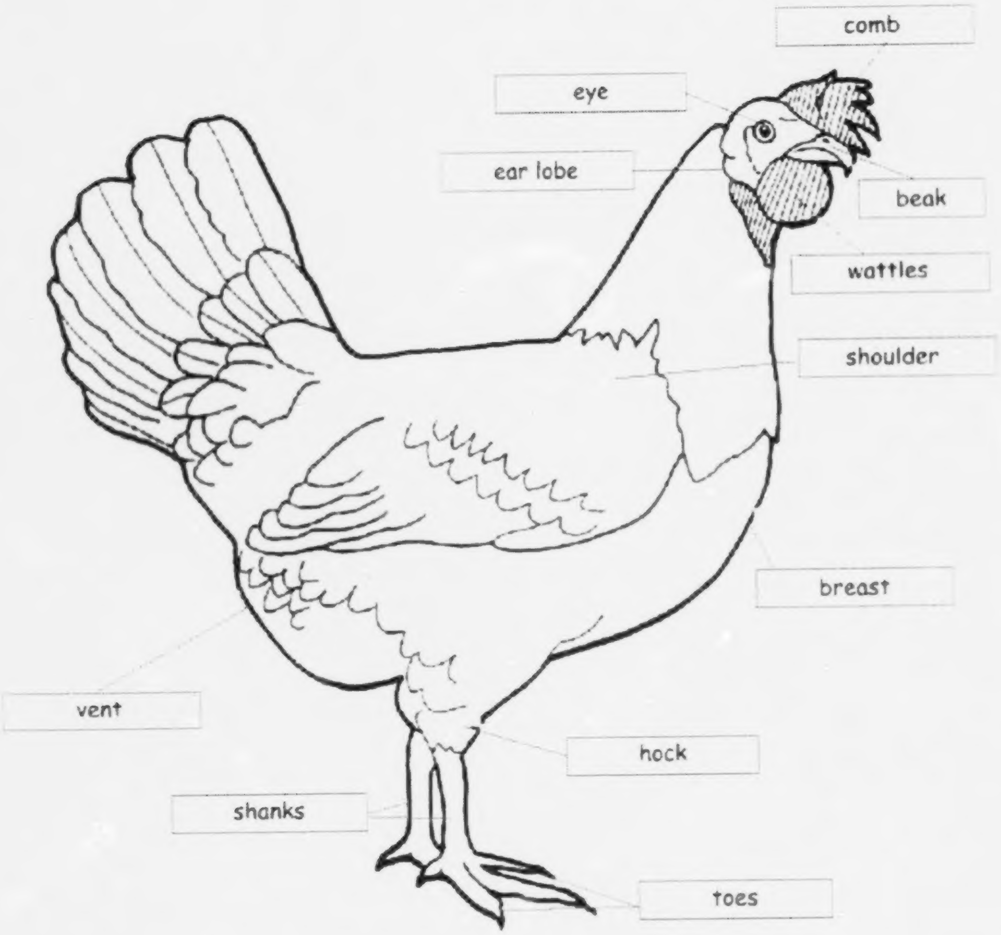






(accidental painting by the chicken was a provocation for looking at chicken feet)

While talking about the chicken we found we needed to know what the names of all of the body parts are, so we searched for, and found, a labeled diagram of a chicken that we keep at the art table for reference.


comb
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*last updated Tuesday, July 04, 2000*

website consultant: Mark Mabry

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## *Section 4*

## Project Summaries

Mangia's
Bountiful Bread

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# The Dog Project

## A Project by 2-Year-Old Children
## at Illinois State University Child Care Center, Normal, Illinois

***Length of Project:** 15 weeks* ***Teachers:** Pam Morbitzer, Scott Brouette*

**Phase One**

### *Beginning the Project*

The Dog Project was brought to life by a visit from my puppy Ellie. Her visit initiated discussions that led children to draw pictures, share stories, and bring photos of the dogs in their lives. Several questions were generated from our classroom discussions. Some topics discussed included what dogs eat, how they play, why they bark and bite, and where they go to the bathroom. The idea web showed that the children already knew a great deal about dogs; therefore, my expectations of the project were to build on their current knowledge and to investigate any misconceptions they had regarding dogs.

**Phase Two**

### *Developing the Project*

Project investigations began by inviting three dogs and their owners to our classroom. The children prepared interview questions for the dog owners such as "what does your dog eat?" and "does he/she bite?" The visits triggered interest in different sizes and colors of dogs—topics later investigated by a small group of children who represented their findings with a comparison chart of the three dogs that they had met.

Another child was particularly interested in the height of Lily, a Saint Bernard that visited. We used his body to measure Lily and the other dogs to see which dog was the tallest and which was the shortest. The children surveyed parents and other friends at our school about why their dogs barked and if their dogs had ever bitten anyone.

Having my stories about Ellie's growth and development was a great tool for introducing new concepts. When she began losing her teeth, I brought in a few for the children to examine, prompting interest in why teeth fall out. The children discovered that they would lose teeth too.

Throughout the project, I took pictures and posted documentation to keep parents updated and for the children to revisit early phases of their work.

**Phase Three**

### *Concluding the Project*

As a culminating event, the children created a mural. They sketched and water-colored pictures of dogs we met or dogs in their lives. The children's paintings were more detailed than at the beginning of our project. Considerable attention was given to facial features as well as to size and color. The mural was displayed in the hallway, and the children took every opportunity to share their work with parents, student workers, and other friends in our building. This project expanded the children's ability to formulate, ask, and brainstorm inventive methods to answering questions and increased their knowledge of puppies and dogs.

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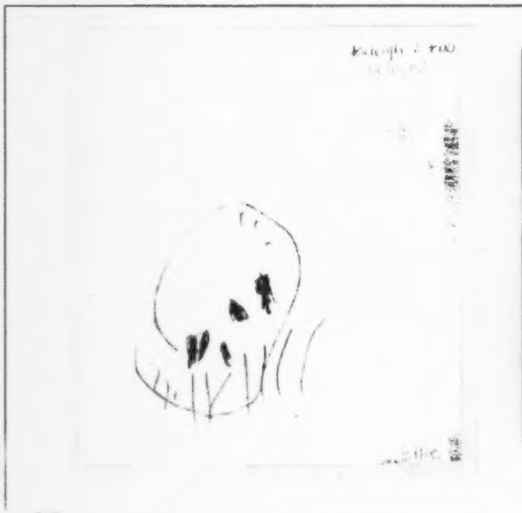
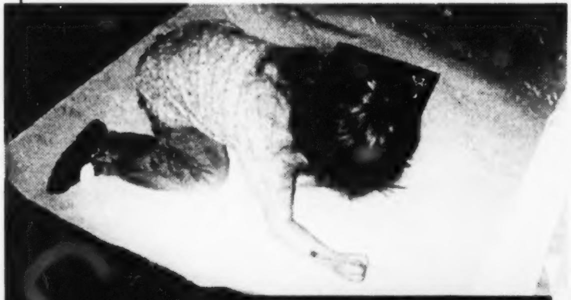
**Comments**

The Dog Project was the most successful project I have ever implemented with 2-year-olds. The children's interest level remained high throughout the entire project. Several parents commented on the amount of time the children spent talking about dogs outside of school. One girl conducted morning meetings when she got home from school each day. She revisited the events of our day, which was a wonderful example of how meaningful her work was to her. This project reaffirmed my belief in the power of project work and the important dispositions for learning that young children gain through projects.



**Kaleigh (2.10 yrs.)** drew a picture of Ellie.
"I drew 2 eyes for her and put dots
on her body by her eyes. I wrote your name
**(Pam)** and **Ellie's** name on it."



r
Favorite
Dogs

# The Grocery Store Project

## A Project in a Multi-age Classroom of 3-, 4-, and 5-Year-Old Children, three with special needs, at Bright Beginnings Pre-K At-Risk Program, Eureka, Illinois

***Length of Project:** 2 months* ***Teachers:** Pam Scranton, Angie Wells*

| | |
|---|---|
| Phase One | *Beginning the Project*<br>This topic was chosen by the teacher because the local IGA grocery store was only a few blocks away from the classroom and could be visited frequently during the project. We spent a few days walking to the IGA and talking about the children's experiences at the store. The children had lots of prior knowledge about this topic and focused rather quickly on what they wanted to explore and what they wanted to see on their field visits. Lists of questions and preliminary webs were generated easily because of the familiarity of the topic. The children narrowed their focus to investigating the cash register, the scanner, and the different departments, voicing at once their intentions to build their own IGA when they returned from the field experience. I was hoping that they actually would be able to focus their investigations in such a big store, that they wouldn't be distracted in their fieldwork on site, and that they would come away with some solid information to begin their constructions. |
| Phase Two | *Developing the Project*<br>As I had hoped, the children became really interested in the scanner and cash register. They were able to actually use both and "ring up" a customer on the field experience! A parent volunteer who was an employee of IGA was our site expert for the morning, and she was able to give the children some experiences that they would not have had otherwise. One child meticulously sketched the IGA sign and spent several days back in the classroom representing the sign using many different types of materials. The other children most interested in constructing the store divided themselves into a scanner group and a cash register group. Children who were not constructing painted signs, labeled shelves, and made money for the cash register. *All* the children brought in supplies to "stock the shelves"; even the kids who were not really involved in the project were very driven to save empty boxes for the grocery store. The construction took 2 weeks with drawing, painting, and journaling happening in other parts of the classroom, but the core project group was champing at the bit to start playing in their construction. The dramatic play was intense at first, and the children had to decide together to limit the number allowed in the store. One child had the idea to form a list, keeping track of who had a turn and who had not. As this high-quality play progressed, one 4-year-old boy kept up his work on the scanner. He kept experimenting with new materials for the surface of the scanner, wanting that transparent effect, and he kept trying to find a way to get the scanner to "light up." This little boy would work on the scanner with dramatic play going on all around him, a definite change for a child who was distracted easily before this project. Our parents helped out by saving empty boxes, bringing in sacks for bagging the groceries, and volunteering their time in the grocery store to interact with the children. |
| Phase Three | *Concluding the Project*<br>As the dramatic play lessened and the constructions slowed, the project group met again and discussed taking apart their grocery store. Because our school year was coming to a close and the children took part each year in putting the classroom away for the summer, the taking apart of the grocery store could coincide with these other end-of-the-year activities. More importantly, the project group and I began discussing ways they could share what they had learned with others. They decided to make and display large story cards, with some of the children describing the pictures and photos on each card. Because our program's annual ice cream social was fast approaching, they decided to try and have the story cards and their dialogues ready for that evening parent activity. For the next week, the project group worked furiously sorting photos and taping them, dictating their descriptions, and practicing for the ice cream social. The parents were impressed that night with their children's knowledge of how a grocery store works and of their intense feelings about what they had learned during this project. After school was over for the year, their story cards were displayed inside the IGA, and the children took great delight in looking at their own work displayed so prominently in their local grocery store that summer! |

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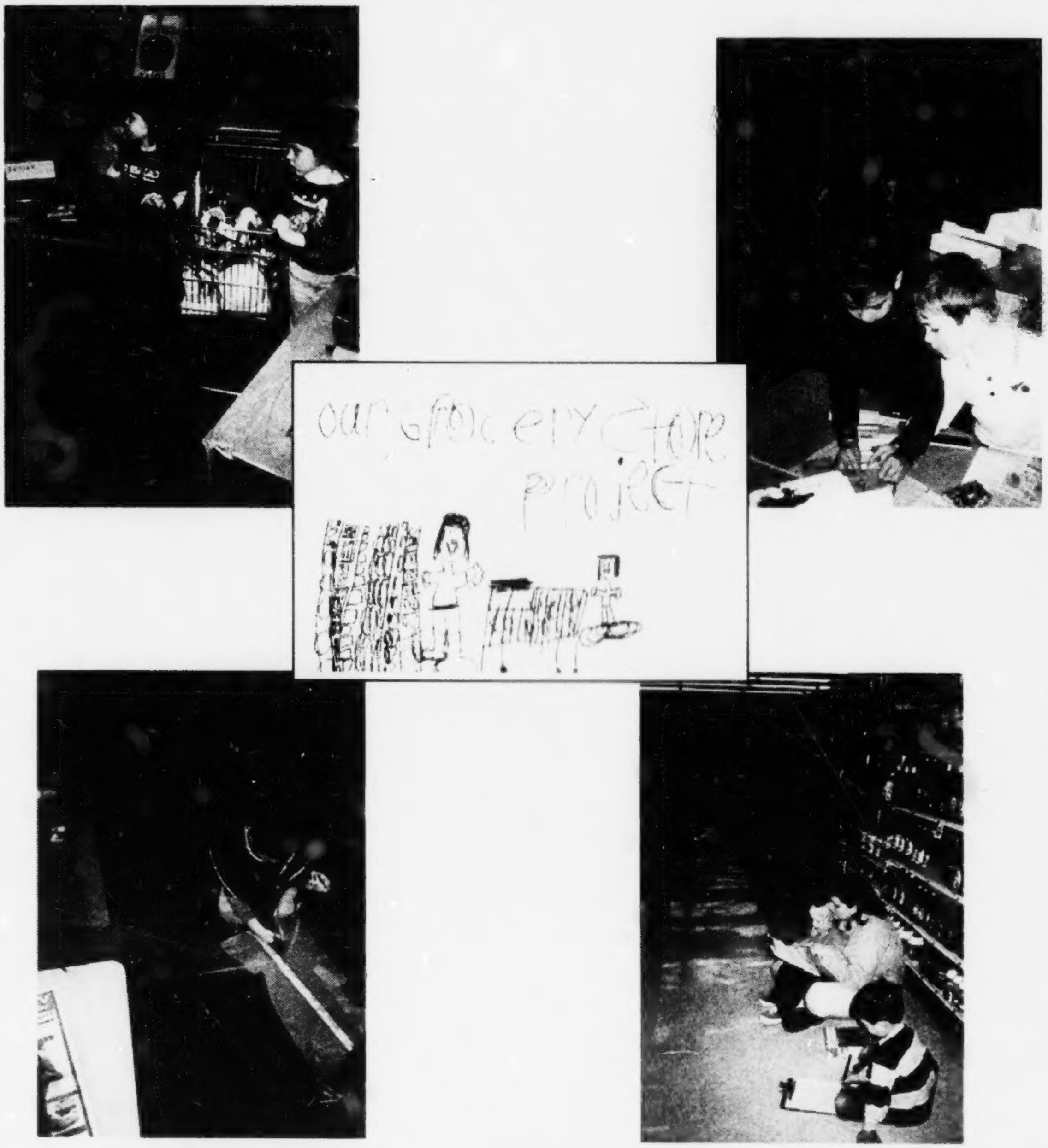
## Comments

As a teacher who has been doing projects with children for several years, it still amazes me how much I learn with every new project. With the grocery store topic, my children had lots of prior knowledge, and we did not have to spend much time developing the topic. It was a very easy start to our project, and I think I'll try to steer towards more familiar topics like the grocery store in the future. But because of the very nature of the Project Approach, one never knows what kinds of interests will develop! I saw children I've had for two years develop new kinds of learning behaviors. What a joy it is to watch children become more confident in their own abilities to investigate and discover what interests them.



# The House Project

## A Project by 3-, 4-, and 5-Year-Old Children
## at University of Alberta Child Study Centre, Edmonton, Alberta, Canada

***Length of Project:*** *10 weeks* ***Teachers:*** *Sharman Armfield, Lee Makovichuk*

### Phase One

*Beginning the Project*

As we began our school year, we spent time visiting children in their homes. During our home visits, we learned that many families were involved in home renovations, had just moved to a new house, or were in the process of building a new house. Having knowledge of the changes our families were experiencing, we began to plan a project on houses. We felt confident the House Project would provide the opportunity for each child to be an expert and draw in our parent group to share their expertise in the many aspects of a house. As we began to develop a web of the project, we learned that a new roof would be installed on our very own Ring House, the building that houses the pre-K and kindergarten program. After the initial weeks settling into the routine of the school year and developing some familiarity with one another, we began to gather children's stories and experiences with their houses, homes, and families.

### Phase Two

*Developing the Project*

On the day the roofers arrived, we asked the children, "What do you think they are doing up there?" A group discussion unfolded as children readily shared their ideas and asked questions. "They are sweeping the spiders away." "The roof was leaking so they are fixing it." "What are their tools?" "Hey, let's ask them what they are doing up there!" Predicting the children's desire to talk with the roofers, we had arranged a visit with the foreman. Clipboards in hand, we ventured out to interview the roofers—the first of many visits to the roofing site. The children were interested in the progress made and the materials used. Parents came into the class to share their knowledge of plumbing, electrical tools, and house design. With each visitor, the children's constructions showed more detail.

Families were invited to share favorite experiences. Some families shared storybooks; others shared cooking experiences. Dramatic play developed as children read to their baby dolls, arranged tea parties, and cooked meals. Block work increased in design as small furniture was added. Rooms, hallways, and staircases emerged as children worked together to construct floor plans and house models. Investigation emerged out of questions the children asked. One child asked, "How many floors does Ring House have?" Looking at the radiators in Ring House lead to another investigation to discover how many radiators were in Ring House.

Having been a close observer in the house his uncle had recently built, one child made a photo album of his observations and shared it with the class. As a closure to the renovations in his cabin, one child brought in pieces of materials for his peers to explore, draw, or use in their building. A small group of children explored the "Three Little Pig" story. After many weeks of preparation, the group presented the production to their parents and peers.

### Phase Three

*Concluding the Project*

With the coming December holiday, we planned to conclude our project to coincide with the approaching winter break. Many families had shared aspects of celebrations with stories, food, and music. With input from the children, together we planned an event that would allow the children to lead their families in celebrating houses. Groups of children and their families created detailed candy houses, others designed eye-catching chimes constructed from pipes and miscellaneous metal pieces used in the building of a house. Several families created candles using bee's wax. Children proudly showed their work and photos to family members.

## Comments

The House Project was a wonderful first project for our year. It allowed each child to be an expert through sharing and discovery. The project developed through the interest of the group, exploring the components of plumbing, electricity, structure, furnishing, heating, and design. With each field experience and visiting expert, the children demonstrated developing knowledge through increasing the detail in their representational work. We learned that children with limited experience required time to explore and manipulate these materials before using them in a representational way. Providing the materials for the children to explore, then providing information and scaffolding their learning resulted in our awareness of their developing knowledge and allowed them time to develop elaborate representations of their understanding. As a teacher, this process was exciting to witness and be involved in.

# The Musical Instrument Project

## A Project by 3-, 4-, and 5-Year-Old Children
## at Illinois Valley Community College, Oglesby, Illinois

***Length of Project:*** *10 weeks* ***Teachers:*** *Marilyn Worsley, Jan Kirkham, and Practicum Students*

## Phase One

### *Beginning the Project*

Earlier, we had observed many of the children playing toy brooms as guitars and kitchen pans as drums. But before jumping into a project on musical instruments, many questions had to be answered in the minds of the teachers. For example, would this topic be enjoyable to the student teachers as well as the children? Would there be plenty of opportunities for the children to investigate and represent? With these questions answered in our minds, we set out to explore instruments. We began by webbing what the children already knew and focusing on our own classroom instruments.

## Phase Two

### *Developing the Project*

We gradually introduced many types of instruments into the classroom for hands-on manipulation, observation, and representation. Several experts played their instruments and answered questions. Over time, the children's interest narrowed to guitars. More guest experts visited with different types and styles of guitars. We were fortunate to have a guitar repair shop and museum in the area that we could visit. While there, the children were able to investigate primitive guitars, open guitars, and instruments related to guitars.

After this visit, several children were no longer satisfied with sharing the one classroom guitar or using pretend guitars. They wanted their own "real" guitars to play. One child, who had recently seen a program on guitar making on television, stated that he knew how to make one. We documented his steps as he planned and constructed his first guitar. However, he was not satisfied with his first model. He had glued the strings to the guitar, and he explained that "If the strings can't move back and forth, the guitar can't make any sound." More materials were added to the classroom project area, and the children built many guitars with free-moving strings.

## Phase Three

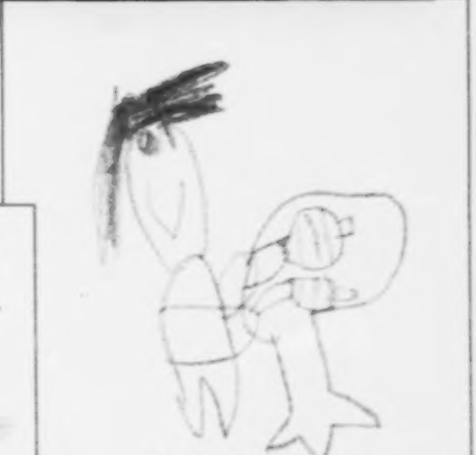
### *Concluding the Project*

To culminate the project, the children decided to display their guitars in the main lobby of the college. We used a digital camera to photograph each child with his or her guitar and then created a mini-display that included the photograph and narrative about the guitar by each child. These mini-displays were placed alongside the guitars. The insights the children displayed through their narratives were even more spectacular than their handmade guitars!

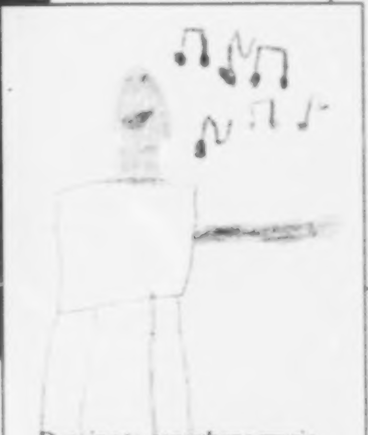
## Comments

The knowledge and skills the children gained from this project were astounding—from the simple idea of which way to turn a screw to the idea that vibrations cause an instrument to make its sound. The project helped others learn about children For example, after a field trip, a band director was amazed that young children could draw with such detail. Children began using this tool at home. One child even kept a clipboard with her while watching television, in case she saw something she wanted to remember. I believe this project had a huge impact on many people.

Sheet music.



Playing the xylophone.



Dancing to saxophone music.

# All about the West Room Hens

**A Project by 3-, 4-, and 5-Year-Old Children**
**at Bing Nursery School, Stanford University, Stanford, California**
***Length of Project:*** *10 weeks* ***Teachers:*** *Jane Farish, Mark Mabry*

## Phase One

### *Beginning the Project*

In September, our class inherited two chickens that had hatched in April. Interestingly, children displayed little curiosity in them. Then in November, to their surprise, they found a brown egg! We observed children studying the hens closely as they collected and counted the eggs. They asked questions and initiated discussions. We recorded these and also noted misconceptions to help draw up research questions. We were intrigued to find that children were not applying their knowledge about birds to the hens, so one goal was to develop more understanding of "birdness."

## Phase Two

### *Developing the Project*

Children wanted to find out whether hens can fly. They encouraged the hens to explore the climbing equipment and observed, "they hop and flap but they don't fly." After many discussions, one hen was lifted high into a tree, and she did fly down! "Do hens have ears?" was also investigated. Observational drawing, clay modeling, photographs, and library research helped children study hens' anatomy and learn names of body parts. When a visiting expert came with a Light Brahma hen, the hens' similarities and differences intrigued the children. A focus became studying pictures of different breeds, and children used pictures to make a matching game and block play accessories.

Investigation of the eggs started with the question "why are their eggs brown?" Cooking was a natural progression from cracking eggs open to examine them. Eggs were boiled, poached, scrambled, fried, and made into omelets, pancakes, and French toast. Results were tasted, tested, and recorded at snack time. A parent provided quails' eggs to compare with hens' eggs. Groups ate snack outside, attended by the hens, to test theories about what hens eat. They tested food from their snack as well as corn and rabbit food. Observing the hens scratching in the yard developed the children's knowledge, and a final list included grass, worms, and snails.

One child asked the question: "Why don't the hens have names?" as a solution to the dilemma of telling the hens apart. We had been reading hen stories, so another child immediately responded, "Let's call them Henny and Penny," and after charting everyone's suggestions, the children ultimately did vote for these names!

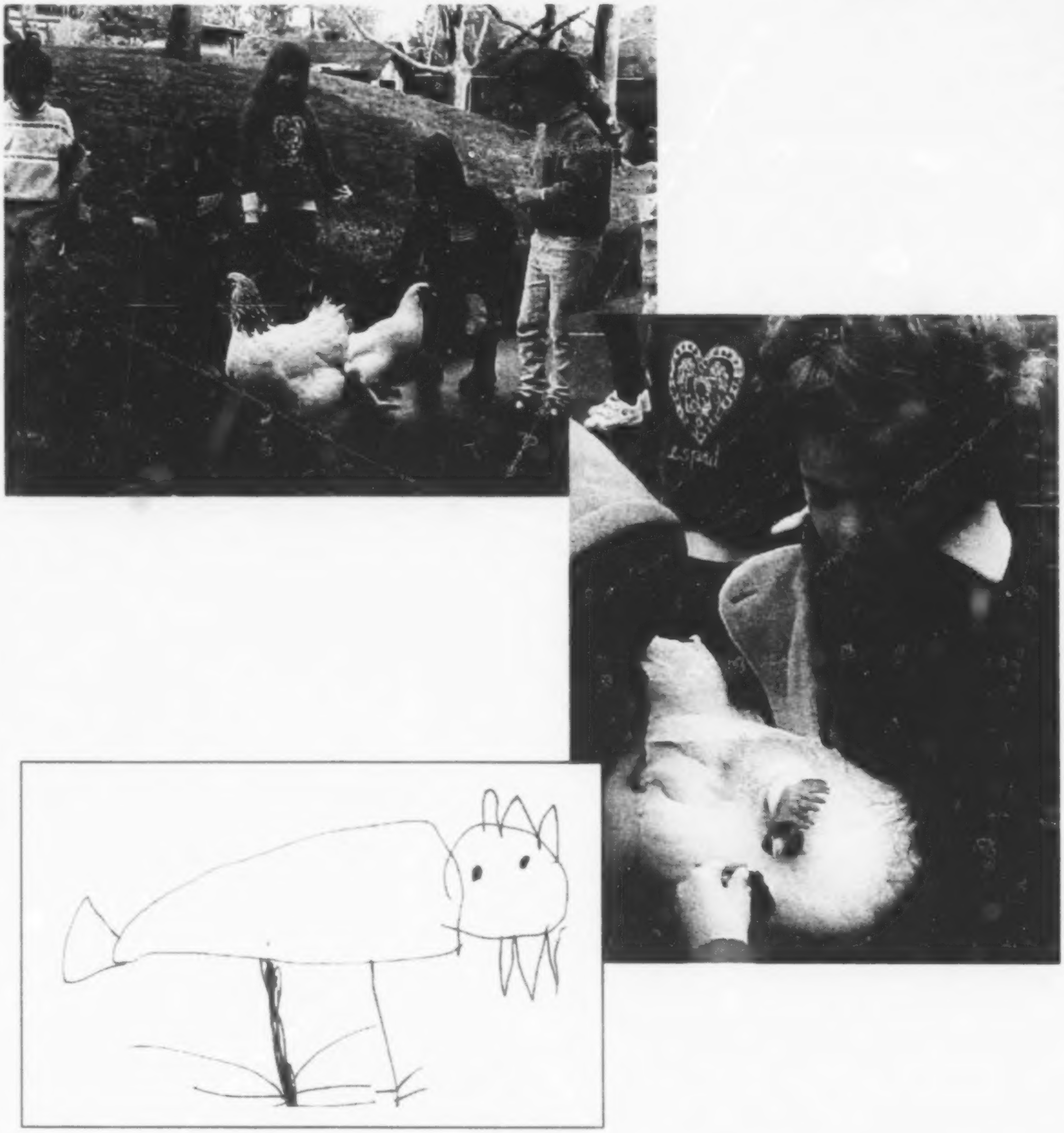
## Phase Three

### *Concluding the Project*

By March, although there was still unabated enthusiasm for egg cookery and encouraging the hens to fly, the research questions were answered, and the teachers decided it was time to conclude the project. We gathered pictures and words from the ongoing documentation, and the children made a book about Henny and Penny as a culminating event.

## Comments

This project generated schoolwide interest and involvement. Children from other rooms visited with worms for the hens and to collect eggs for their cooking. The topic resonated with parents who made time to join their children in observing Henny and Penny. We found the children's enthusiasm contagious. From the "crystallizing moment" of discovering the first egg, the children were talking to each other, discussing ideas, and working carefully. We noted them developing analytical skills and observed the value of observational drawing as a tool for children's research and reflection.



# Our School Bus Project

**A Project by 4- and 5-Year-Old Children**
**at Timothy Christian Preschool, Elmhurst, Illinois**
***Length of Project:*** *6 weeks* ***Teachers:*** *Ruth Harkema, Deb Lanenga*

## Phase One

### *Beginning the Project*

We chose school buses as our topic because we see buses from our playground, the mechanic and bus drivers are accessible, and especially because we felt that preschoolers look forward to riding in buses. We began the bus project by asking children to share their experiences riding in buses, to list what they knew about buses, and to shape their memories into stories, drawings, and clay sculptures. Children then chose a bus part to investigate and dictated questions they had about buses. We hoped children would develop skill representing what they saw, asking research questions, learning bus safety rules, and solving problems together.

## Phase Two

### *Developing the Project*

During our first field visit, the bus mechanic gave us a bus ride around campus; demonstrated the stop sign, safety bar, and flashing lights on the bus; and answered our questions. Parents and sixth-grade students facilitated the preschoolers' investigations by recording answers to questions, carrying equipment, and pointing out details for sketching.

After a second visit for repeated sketching, the children began construction of a play bus, each child choosing to build the part she or he had sketched. Children encountered and solved problems in making the bus sides equal in length, matching the height of the driver's seat and steering column, and constructing a three-dimensional bus front instead of a flat drawing on a small box.

As construction continued, children's questions became more complicated: "What are bus parts made of?" "Why?" "How do bus parts work?" "Does the bus have 'electric'?" The bus mechanic supplied answers and a tire and rim for closer study, a bus driver brought her bus to our sidewalk to demonstrate the insides and outsides of the bus, and a high school carpentry student demonstrated how to nail the cardboard sections to the wood bus frame. Children cooperated to create, paint, and nail together a 10-foot long, 4-foot high, yellow, open-windowed bus.

## Phase Three

### *Concluding the Project*

The children planned a celebration to share what they had accomplished. They wrote invitations and counted the number of moms and dads and brothers and sisters planning to attend.

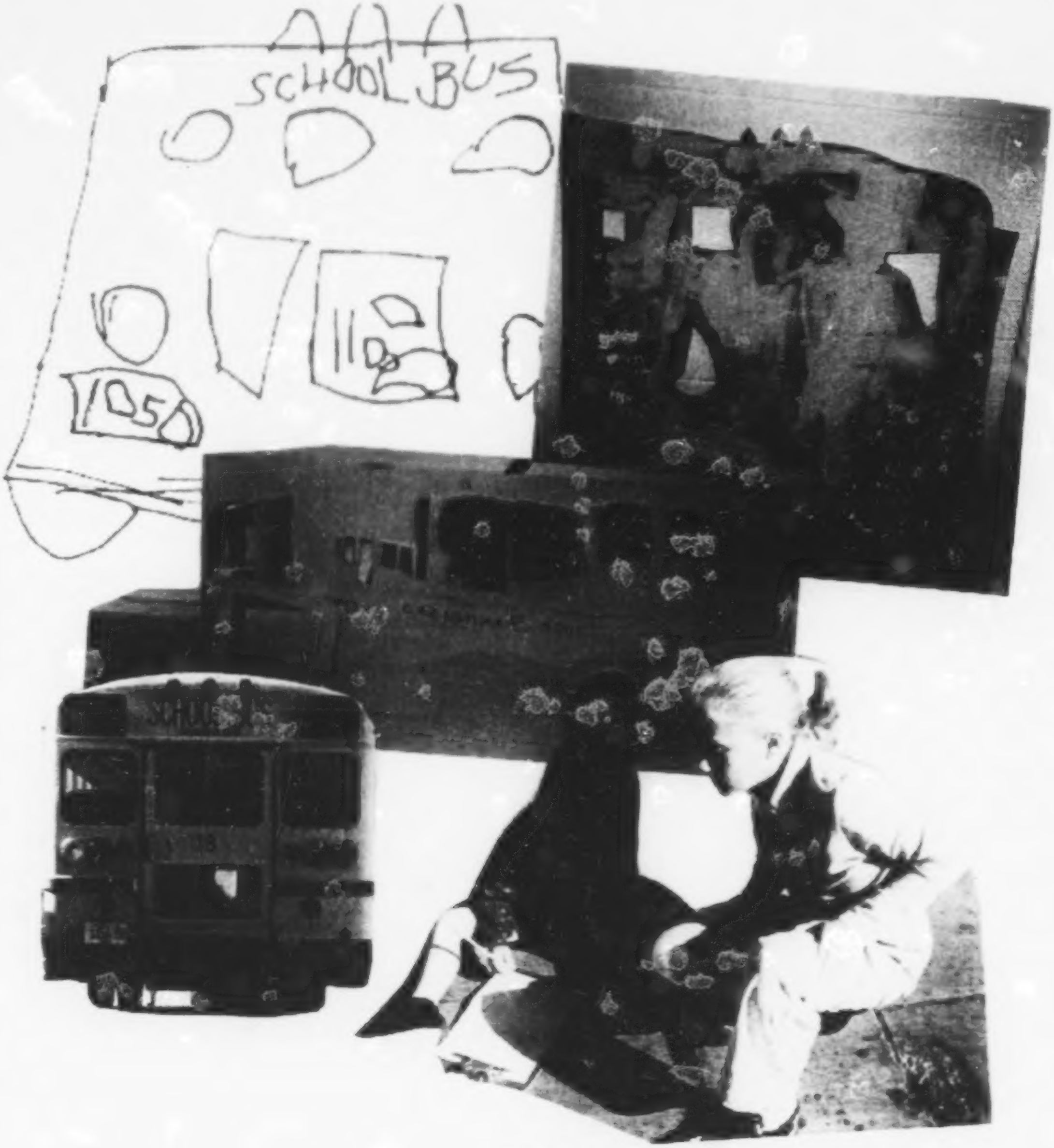
The children felt important as their parents viewed bulletin board displays, watched the videotape, listened to their new verse of the "Wheels on the Bus," boarded their bus, praised their contributions, and enjoyed the wheel cookies that the children had decorated with six chocolate chip lug nuts.

## Comments

Things we found most impressive:

- how focused children are during fieldwork as they look for answers to their own questions;
- how repeated sketching helped children's perceptual growth and understanding;
- how important it is to allow children to brainstorm their own solutions;
- how teacher reflection during the documentation process uncovered children's growth and needs;
- how willingly fellow teachers, local experts, parents, and upper-grade students helped.

We were delighted by the persistence of two children who were uninvolved last year in daily activities. They worked together everyday, painting, designing the bus front, and suggesting additions to the bus.



## The Valeska Hinton Health Center Project

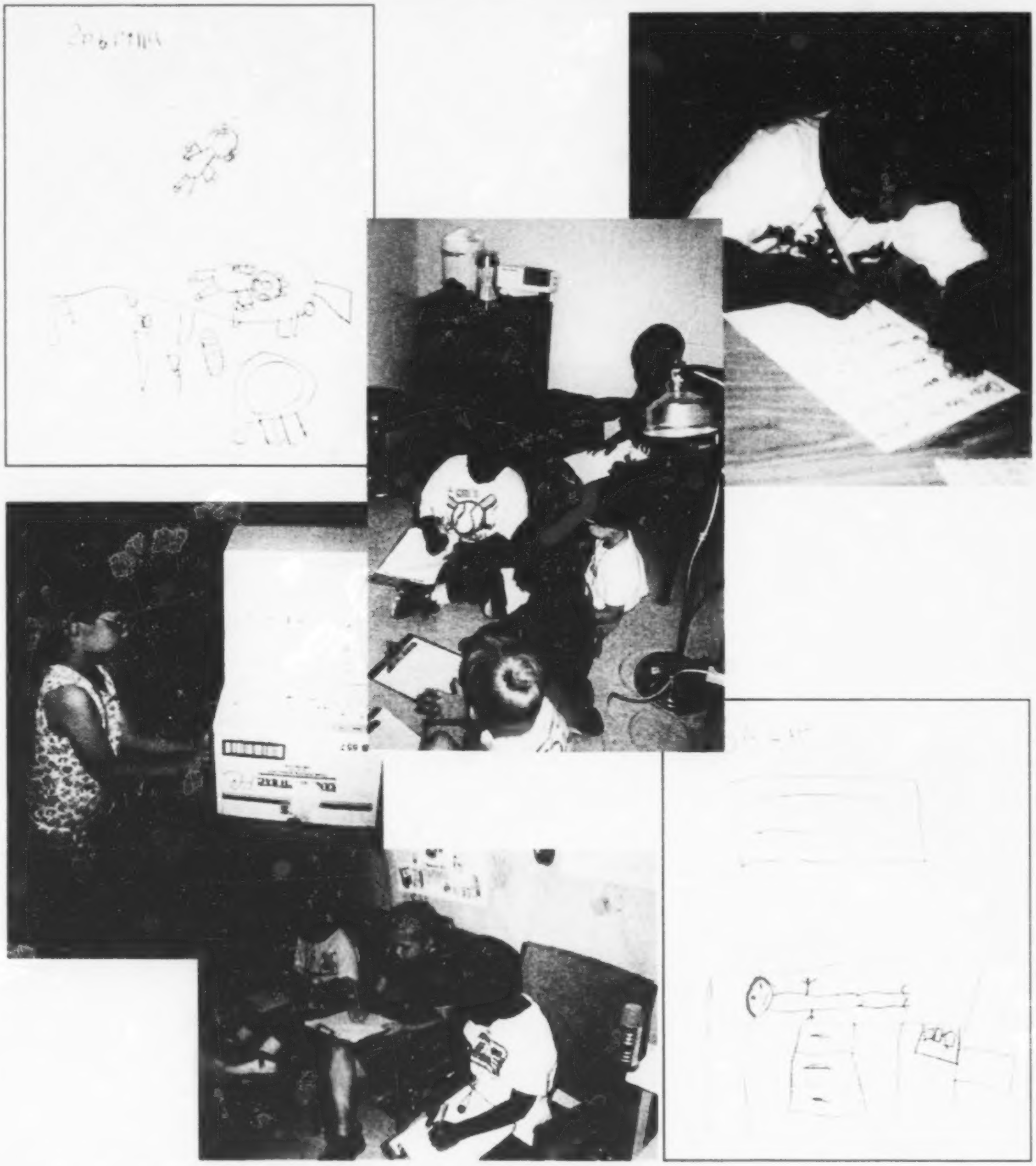
### A Project by 3-, 4-, and 5-Year-Old Students
### at Valeska Hinton Early Childhood Education Center, Peoria, Illinois

***Length of Project:** 2 months* ***Teachers:** Judy Cagle, Mary Ann Gottlieb*

| | |
|---|---|
| Phase One | *Beginning the Project*<br>Because many children in the two classes (one class of 3- and 4-year-olds and one class of 4- and 5-year-olds) were new to the center, it seemed important to investigate the school, and the children found many areas that were unfamiliar. One 4-year-old boy said that he got shots "at the doctor's office, not at school." Additional interest in the health center was generated when the son of the nurse practitioner became a volunteer in one of the classrooms.<br>Initial drawings were made and questions were posed before the classes visited the in-school health center. As questions were asked informally, the teachers recorded them for future investigation. The teachers expected the children to learn how the health center helped them at school and to possibly construct a health center in one or both of the classrooms. |
| Phase Two | *Developing the Project*<br>The children decided to find out why a health center was in their school. They learned about school physicals, inoculations, nurse practitioners, and doctors, as well as how and when to use the health center. They visited our own health center and one located in a nearby school. Health center staff provided additional information and were interviewed by the children. Parents supported their children's efforts by supplying materials for the construction of the classroom health centers and by accompanying the classes to the field site.<br>Children represented their learning through drawings, paintings, block constructions, and dramatic play. A group of children helped to create a videotape of a classmate visiting the health center and used this videotape as a reference in constructing the classroom health centers. Because groups of children from the two classrooms met and shared ideas, some of their constructed objects were similar. Other children helped write letters to health center staff, parents, and others at Valeska Hinton inviting them to the grand opening of the health centers constructed in the two classrooms. The older children in the 4- and 5-year-old classroom made books about the in-school health center to share with the younger children in the 3- and 4-year-old classroom. |
| Phase Three | *Concluding the Project*<br>The children in the project rooms invited other classrooms to see the health centers that they had constructed. Individual children explained the functions of various areas in the constructed health centers and the roles of health center staff. Parents, health personnel, and other school staff were invited to visit and hear the children talk about the project. Within the framework of the Work Sampling System, Valeska Hinton's assessment tool, the children showed development in several domains. Growth was observed in individual children in their disposition toward learning as they were engaged for significant periods of time while investigating the Valeska Hinton's health center and while constructing the dramatic play environment. |

## Comments

Early visits to the field sites helped the children increase their experiences so that they had knowledge on which to build later research in the project. This project was meaningful because it helped the children become familiar with their school's health center. This project was unique because the children involved were from a multiage classroom of 3- and 4-year-olds and a multiage classroom of 4- and 5-year-olds; friendships developed between the two classrooms as the children worked on this common topic. The teachers found the collaboration to be helpful to the children and to themselves. This project was especially pertinent for these two classes of children because most of them were new to the school.



## The Community Worker Project

### A Project by Pre-Kindergarten and Kindergarten Students at Donald C. Parker Early Education Center, Machesney Park, Illinois

***Length of Project:*** *3 months* ***Teachers:*** *Susan Andrews, Lynn Wade, Karen Johnson*

### Phase One

*Beginning the Project*

The project started while our classroom was doing a thematic unit on dinosaurs. We were learning about the various job duties of a paleontologist, and this discussion sparked further discussion as to what many of the children wanted to be when they grew up. Many of the children showed interest in jobs that were closely related to our community. We webbed as a large group and came up with a list of questions about community workers. We used this list of questions as a guide to assist us in our investigation. Small groups were formed by interest. Each group interviewed one community worker expert. As phase one drew to a close, these small groups presented their new-found knowledge to each other.

### Phase Two

*Developing the Project*

We added to our web all new knowledge gathered from our community worker interviews. Our "experts," who were interviewed on site, consisted of a fireman, policeman, airplane pilot, weatherman, paramedic, newspaper journalist, school nurse, and school principal.

Next, the children voted on the one community worker they wanted to investigate in depth. The policeman was chosen, and a field site visit to our local police station was scheduled. The children prepared for their fieldwork by participating in small group discussions and webbing. The children dictated questions to the teachers and illustrated these questions for their field site visit.

During the field visit, the children made sketches and took many photographs. These drawings and photographs were used to plan construction. The children represented their learning by creating their own police station. Construction included a fingerprinting station, computer 911 station, a variety of police tools, lockers to store police tools, a police car, and a police evidence van. Dramatic play continued in the police station until our school year ended.

Parents were involved throughout the project by participating in the interviewing process, attending the field site visits, and assisting with the construction of our police station.

### Phase Three

*Concluding the Project*

We concluded the project by presenting our police station to one of the local police officers. It was a joy to see the pleasure the students received when they presented their part of the police station to the officer.

This project helped the children expand their ability to speak in a large group situation, listen, solve problems, and work cooperatively. It provided the children an opportunity to experience a focused investigation and represent their learning in many ways.

## Comments

This project was our first multiage project, and it was awesome. We learned that, with the support of parents and staff, it is possible to do a successful project combining two classes of different age levels. It took many people to make this project successful, and we thank them all! The topic was great, and there was a high interest level throughout our investigation. It was extremely rewarding to see the children take the initiative in influencing the direction of their work.

The children interview Officer Jones.

Officer Jones checks out the police car.

Construction on the police station begins.

Children work on the evidence camera.

# The Bicycle Project

## A Project by Kindergarten Students
## at Donald C. Parker Early Education Center, Machesney Park, Illinois

***Length of Project:*** *3 months* ***Teacher:*** *Linda Lundberg*

## Phase One

### *Beginning the Project*

This project emerged from a warm weather change late in February. The children became focused on outdoor activities, mainly bike riding. Children did drawings, had discussions, conducted class surveys, and webbed prior knowledge of bicycles. Questions were raised about how bicycles were made and put together. Our investigation began.

## Phase Two

### *Developing the Project*

Nonfiction books were available as a resource during investigation. A local bike shop owner came to visit and responded to their questions. He brought in a bicycle as it comes from the factory, displayed its parts, and demonstrated the assembling process.

Later, children prepared for a visit to the bike shop. They divided themselves into small groups, developed questions, and involved parents to assist them during the fieldwork.

## Phase Three

### *Concluding the Project*

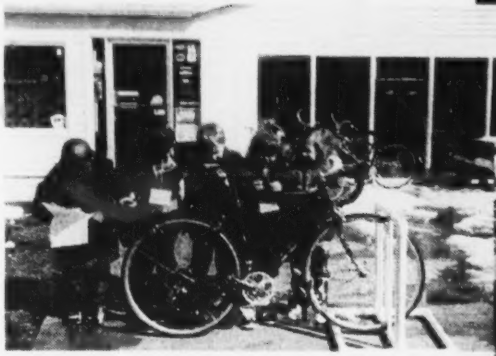
Using their field notes and sketches, the children reported information to other groups in the classroom.

They decided to create a display of drawings, written work, and constructions in an area of the classroom for our Parker Center Learning Fair.

Shortly after concluding their study, disappointing news came from the principal. The center's bike path construction would be postponed until a new wing was added to the school. This news created a great deal of discussion in our classroom and extended our bicycle project in a new direction . . .
The Bike Path.

## Comments

The work during the bike project led to a new experience directed by the children, which concluded with an involvement that touched the whole school. This project really cemented the importance of children sharing their learning with others. The ownership that the children took in the bike path was truly amazing.



BIKE
ROUTE
END
PARK
ONLY
BIKE
ROUTE
END

# The Bird Project

## A Project by Kindergarten Students
## at Glencliff Elementary School, Niskayuna Central School District, Rexford, New York

***Length of Project:** 8 weeks* ***Teacher:** Abby Weber*

**Phase One**

### *Beginning the Project*

The project on birds was initiated by the kindergartners' great interest in the birds observed at our feeders outside our classroom window. This interest was further heightened in January, when we made bird seed treats for the winter birds, as illustrated in the book *The Night Tree*, by Eve Bunting. One of the teacher's ongoing goals is to plan hands-on experiences to increase the kindergartners' awareness of the natural environment surrounding Glencliff School. A project on birds seemed like a good way to meet this goal. During phase one, the children and teacher shared past experiences and prior knowledge about birds. From our group discussions, we created a web and recorded the information (and misconceptions) we had gathered. The children were then given a variety of materials to work with to represent what they already knew. Finally, using our web and representations, we developed five questions to investigate during phase two of our project.

**Phase Two**

### *Developing the Project*

Phase two of our Bird Project began by having children select which of our five formulated questions they were most interested in researching. Based on prior project work, the teacher purposely asked each child privately to select a question to try and ensure that investigation groups were created on a real interest and not just on the other members of the group. We ended up with between four and eight children in each of the groups. The five questions were: (1) What kinds of birds come to our bird feeders? (2) What bird feeder do the birds eat from the most? (3) What kind of food do birds like to eat? (4) How do you identify a bird? and (5) What do birds use to build nests? Throughout phase two, the teacher provided opportunities to increase the children's knowledge about birds by reading books, bird guides, and magazines, and by exploring several wonderful Web sites on birds. The class participated in special events with several bird experts, which included programs on owls (which included seeing three types of live owls and a wildlife artist's drawing), and bird nest building, as well as several bird-watching walks with a parent who is a birding expert. Prior to beginning their fieldwork, the children had the skilled help of several parents and grandparents to help them build several different types of feeders. We ended up with seven different feeders hanging outside our windows. The children did a great deal of sketching and labeled drawings throughout the project. Although we focused on the birds in our area, we did have a pet parrot spend the day in the classroom to give the children the opportunity to observe and sketch a bird up close. Each child had a "Bird Watching Observation Field Book" to take home and record the birds seen in their yards. The parents had fun participating. The children worked enthusiastically doing fieldwork to learn more about their questions. Each of the groups' fieldwork, data collection, and representations took on different forms that included tally and pictograph charts, sketching, sculpting, designing feeders, and making nests.

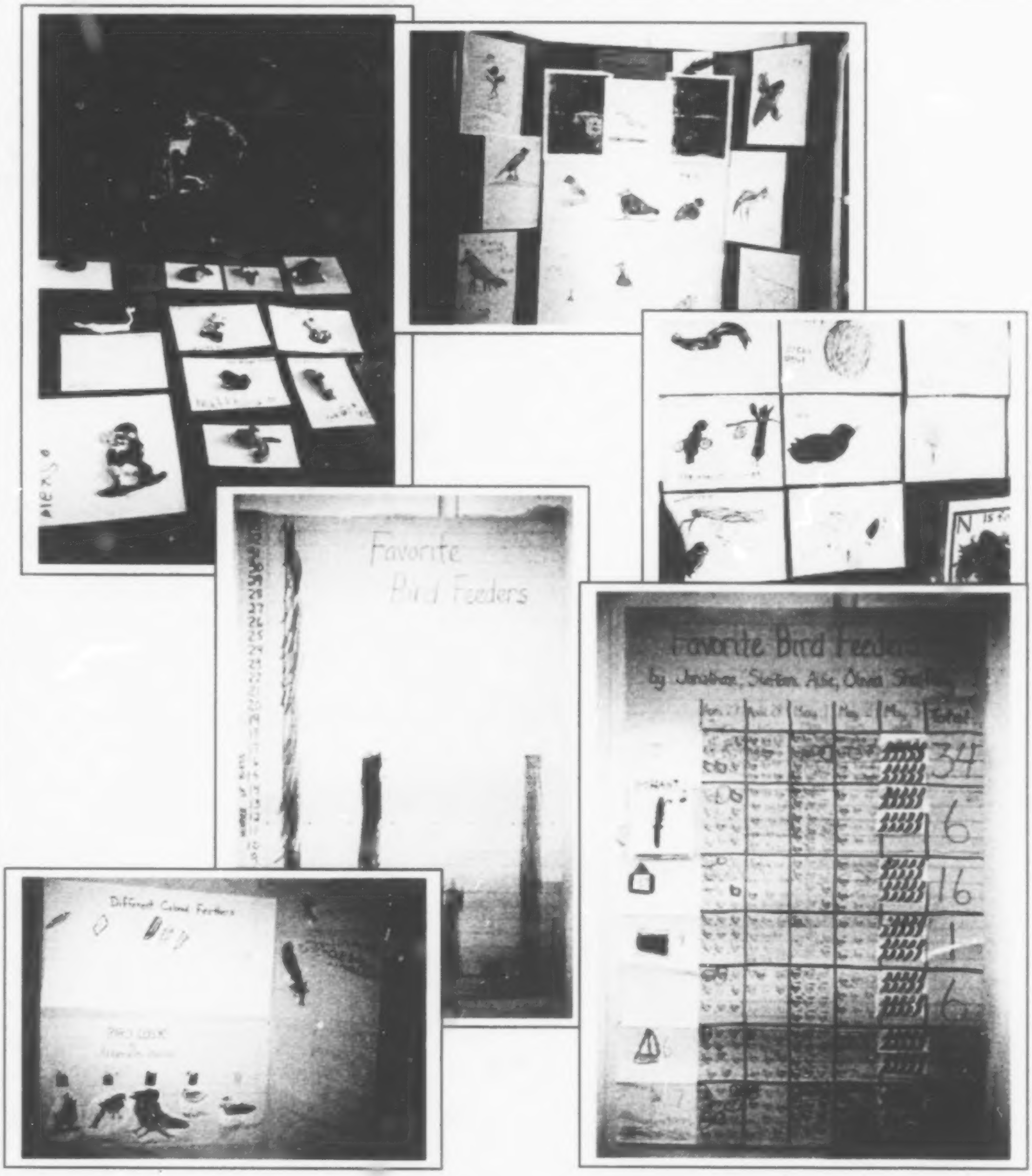
**Phase Three**

### *Concluding the Project*

The children decided to conclude their bird project by inviting families and other classes to a "Bird Fair" open house to share what they had learned about birds. The teacher worked with each group to help the children decide on the best way to represent what they had learned and how to display it. The children made invitations to the Bird Fair and decided on the best way to distribute them. Next, the children worked with their groups to create displays that represented what had been investigated, how the investigation was done, and what was learned.

## Comments

This project was one of the most exciting and profound experiences this teacher has ever had with a class of kindergartners in 24 years of teaching. Doing an in-depth project on birds provided the children with an extremely meaningful and powerful learning experience in which many cross-curricular concepts and skills were naturally integrated. The children did not want to stop the project, even after 8 weeks. In fact, one little boy who had been very hesitant about participating in class activities became one of the most positive leaders in this fieldwork group. During the end-of-the-year conference with this child's parents, they shared that the child felt the teacher was "confused." The child stated: "We study birds in kindergarten, that's what we do! What does she think she is doing bringing in tadpoles!"


Favorite
Bird Feeders
Different Colored Feathers
Favorite Bird Feeders
by Jonathan, Stefan, Alec, Olivia, Shelby
Total
34
6
16
1
6

# Our School

### A Project by Grade 1 Students
### at University of Alberta Child Study Centre, Edmonton, Alberta

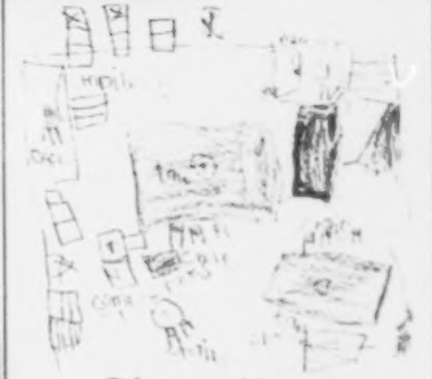
***Length of Project:*** *8 weeks* ***Teachers:*** *Diane Mellott, Margaret Brooks, Angela Farmer*

| | |
|---|---|
| Phase One | *Beginning the Project*<br>The teachers developed an initial topic web based on the children's interest and the social studies curriculum. The project began with readings from a book called *The Littles Go to School*. The children noted that The Littles' school experience was very different from their own. They raised many questions about Our School in response to the book. The class began their study within the classroom, only later to consider the very large University Education Building. They were invited to share their previous experiences with school. They wrote about their kindergarten experiences and drew pictures of their memories. They wondered about the roles of the adults. The teachers recorded the children's questions. Children were encouraged to ask their parents and grandparents about their grade one school experience. |
| Phase Two | *Developing the Project*<br>The children made careful recordings of different areas of the classroom. As they investigated the classroom, they noticed that the equipment, games, and supplies were logically organized into various areas and shelves. A natural extension of the math concepts of collections and sorting began to develop. Soon they were able to develop their field notes into three-dimensional representations. The children chose paper models, shoe box models, blocks, Legos, and woodworking for their representations. They were able to check and recheck their constructions against the actual structures, and found it challenging to build representations on a smaller scale. Their understanding of spatial relationships developed at an astounding rate as they struggled to fit all the components of the area that they were reconstructing within the parameters set out by the media that they were using. Some children visited the grade 2/3 room and took careful field notes, returning to report their findings to their classmates. Others (using a video camera) interviewed the custodians, the secretary, and our visiting principal. The children were eager to continue exploring more spaces within the education building. The children had previously visited a student lounge located in a far-off corner of the building and drew a map to the fourth floor in order to show the rest of the children the way. Later the class tested the maps, then returned to the classroom to try again. When they finally located the lounge, the class celebrated by bringing their snacks to enjoy under the beautifully vaulted glassed-in ceiling.<br>The class also visited another school. The children predicted what they thought the school would be like. Their ideas were related to their previous experiences. Upon their arrival, the children compared notes on their first impressions. They tried out the students' desks, and they took copious field notes as they were keen to begin building once they arrived back at their own school. Later, the children wrote a book about their experiences and developed a Venn diagram comparing the two schools. |
| Phase Three | *Concluding the Project*<br>The children invited their parents to tour the classroom and then to join them in the fourth floor lounge for a campfire and evening pot luck. The evening was very much anticipated, and the children ensured that their classroom was up to careful scrutiny of their parents. When the evening finally arrived, the children were very confident tour guides as they shared their representations with parents, grandparents, and friends. |

## Comments

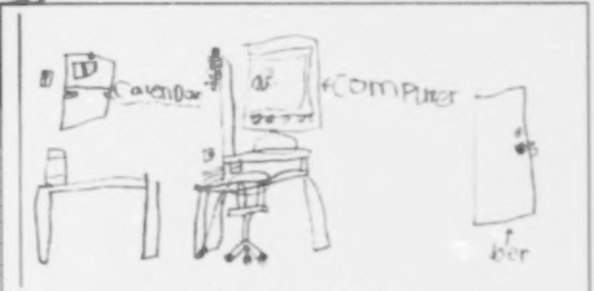
As the teachers reflected on the successes of the "Our School" project, they found it to be a wonderful way to blend prescribed curriculum with a very meaningful and relevant project work topic. In the process, the teachers were able to gain many insights into the children's thinking, their strengths, and their personalities.

We built the classroom with Legos.



'Birds-eye view' of the classroom

Block representation of the auditorium



Our secretary's office.

# The Kid's Grocery Store

## A Project by Kindergarten Students
## at Westmere Elementary School, Guilderland Central School District, Guilderland, New York

***Length of Project:*** *3 weeks* ***Teachers:*** *Debra Wing, Debbie Biondo*

### Phase One

*Beginning the Project*

Children from Westmere Elementary School live in a traditional suburban community. One of the places everyone visits and can meet neighbors and friends is the local grocery store. The local grocery store is a 2-minute walk from our school. The children often talked about going to the grocery store with their parents. I thought the grocery store was a worthy topic because of the children's experiences and because the store's proximity to the school allowed repeated visits and close examination. I began the project by asking the children to share a grocery store story with one another. Some of those conversations were recorded on a class experience chart with names printed next to each story in case further clarification was needed. After a short modeling and discussion of a memory sketch, each child was asked to draw some part of the grocery store. I told the children that we would be returning to sketching on a number of different occasions throughout our study of the grocery store.

### Phase Two

*Developing the Project*

At our class meeting, children added ideas to a class web that reflected areas of interest and study expressed earlier through discussion. Children were asked to select an area of study that they wanted to find out more about. We divided into six working groups: (1) Cereal Group—"How many kinds? What kinds are kid's favorites?" (2) Chocolate Group—"How many treats are there with chocolate? What are some of the chocolate foods? Where can chocolate be found around the supermarket?" (3) Check Out Area—scanning, bagging, paying at the cash register, and grocery carts; (4) The Video Department—"What movies can you rent? Does the store have favorite kid movies?" (5) Prepared Foods—"What foods could you buy and bring right home for dinner? How were the foods packaged? Did they have kid's favorite take out food?" (6) Ice Cream—"What flavors could you buy? What specialty ice creams were available? Did kids prefer chocolate or vanilla ice cream?"

Two moms accompanied us to the grocery store where we began to observe, photograph, and sketch to obtain information and answers to some of our questions. Prior phone calls to the store allowed some of the different section managers to meet our small groups and share some special information. The children brought back many additional questions to the classroom after that visit, and they were sorted and added to the project web. One of our parents was a chef at a local restaurant, and he came into class to demonstrate cooking for the "Prepared Foods" group. A weekly newsletter was sent home to the parents with many photographs and descriptions of our project work. Parents were asked to send in empty product boxes, cans, packages, and store circulars and coupons. It was decided that each group would re-create their part of the store for our grand opening and celebration of our project work.

### Phase Three

*Concluding the Project*

We celebrated all of our information gathering and representation by having a working grocery store in our classroom. The grocery store was open every day while we were involved in the grocery store project. Much rich dramatic play evolved. Our culminating event was a special day to have the parents and our fifth-grade book buddies visit. They were invited to shop at our "Kid's Grocery Store." Much preparation went into creating the shopping baskets, pretend money, check-out counter, aisles where food was displayed, many scrumptious looking prepared dinners, and video selections. The Kid's Grocery Store was open for an hour in the morning and an hour in the afternoon. We displayed all of the information gathered through direct observation and surveys. We had numerous Venn diagrams showing favorite food selections, bar graphs showing the different choices in food groups, and stuffed replicas of fruits, vegetables, and fish. Many signs were made to label various parts of the store and different food products. The children worked with marked enthusiasm and purpose. Children who could write helped less-developed writers with their signs and displays. There was an extremely purposeful tone in the class as we approached our big guest shopping day!

## Comments

It was wonderful to see how such an ordinary experience—grocery shopping—evolved into a topic of such detailed investigation. I felt particularly proud of the way the children began to ask questions and raise further areas of study as we dove deeper into the topic. We did this project when the children were young 5-year-olds, and many of them did not have well-developed writing or drawing skills. Because these skills were woven into the representation of our store, the children, many reluctant and self-doubting writers and sketchers, began to see their contributions as valuable and needed. As in the life of most projects, it is difficult to know when and how to disassemble the project. This class was reluctant to take anything away. On a Friday after our guest shopping day, we discussed and decided on taking down the largest parts of the store, and they were stored away or given to children to take home. After the weekend, when the children arrived back at school, the first thing a group of students proclaimed and got right to work on was re-creating "that great grocery store!"

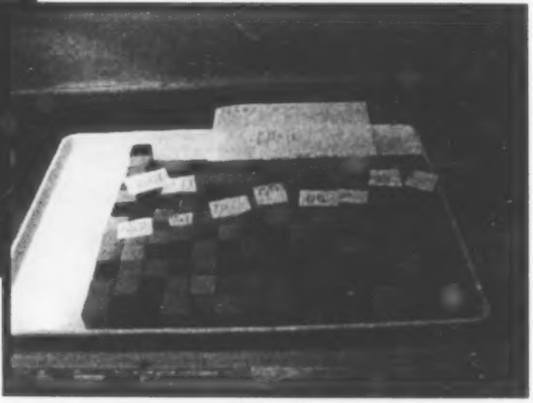
The "check-out" cash register and office.

ice cream?
Prepared Dinner

The prepared dinners.

COMEDY
DrAMA
Video Rental

The video section.



Blocks representing all of the cereal choices counted at the grocery store.

## The Library Project

### A Project by Kindergarten Students
### at Cherry Tree Elementary and Orchard Park Elementary, Carmel, Indiana

***Length of Project:** 3 weeks*   ***Teacher:** Candy Ganzel, Jan Stuglik*

**Phase One**

### *Beginning the Project*

We decided on the library as a project for two reasons: (1) we taught in the same school district but in different buildings and wanted to do a project together with our classes that would have easy access to fieldwork; and (2) we had a new library in our community that many of the children visited and were excited about. We started by having many discussions in our respective classrooms about the library. We also had the children draw about their library experiences. Each class then made a web about the library. From this web, the children decided what they would investigate, and the teachers helped each classroom divide themselves into groups. Our next step was to meet at the library. The areas the children decided to investigate were check-out and check-in, furniture, coffee shop, gift shop, kinds of books, parts of a book, computers, people in the library, and the building.

**Phase Two**

### *Developing the Project*

For the beginning of phase two, the two kindergarten classes met at the library and divided into small topic groups. The library had plenty of space for us to meet and work in our small groups. In these groups were children from both schools. The children formulated the questions they would like to ask the librarians, and a librarian took them around the library to answer their questions. They also had plenty of time to sketch.

Once the children had their questions answered, they came back to the gathering area and discussed the information they had learned. We had one adult to help facilitate each group. The children also had time to process the information and discuss how they might represent what they had learned.

The next week, the children traveled to Jan's classroom to work together for the entire day. The children first got back into their groups to discuss the information, view the pictures they had drawn, and look at the photographs that had been taken. The children then decided how they would represent what they had learned.

Our next goal was to help them gather the materials they needed and to give them most of the rest of the day to work. The children decided to represent what they had learned by building a conveyor belt, making bookshelves and a computer, and drawing the library building. They also made a book about what types of books are in the library; posters of the check-out counter, gift shop items, parts of a book, and the coffee shop; and models of the furniture. Some of the projects were displayed at Orchard Park and some at Cherry Tree.

**Phase Three**

### *Concluding the Project*

Because two schools were involved, we decided that the culminating event needed to be in a neutral place so all parents would feel comfortable attending. We decided to hold the culmination in our school district's main office.

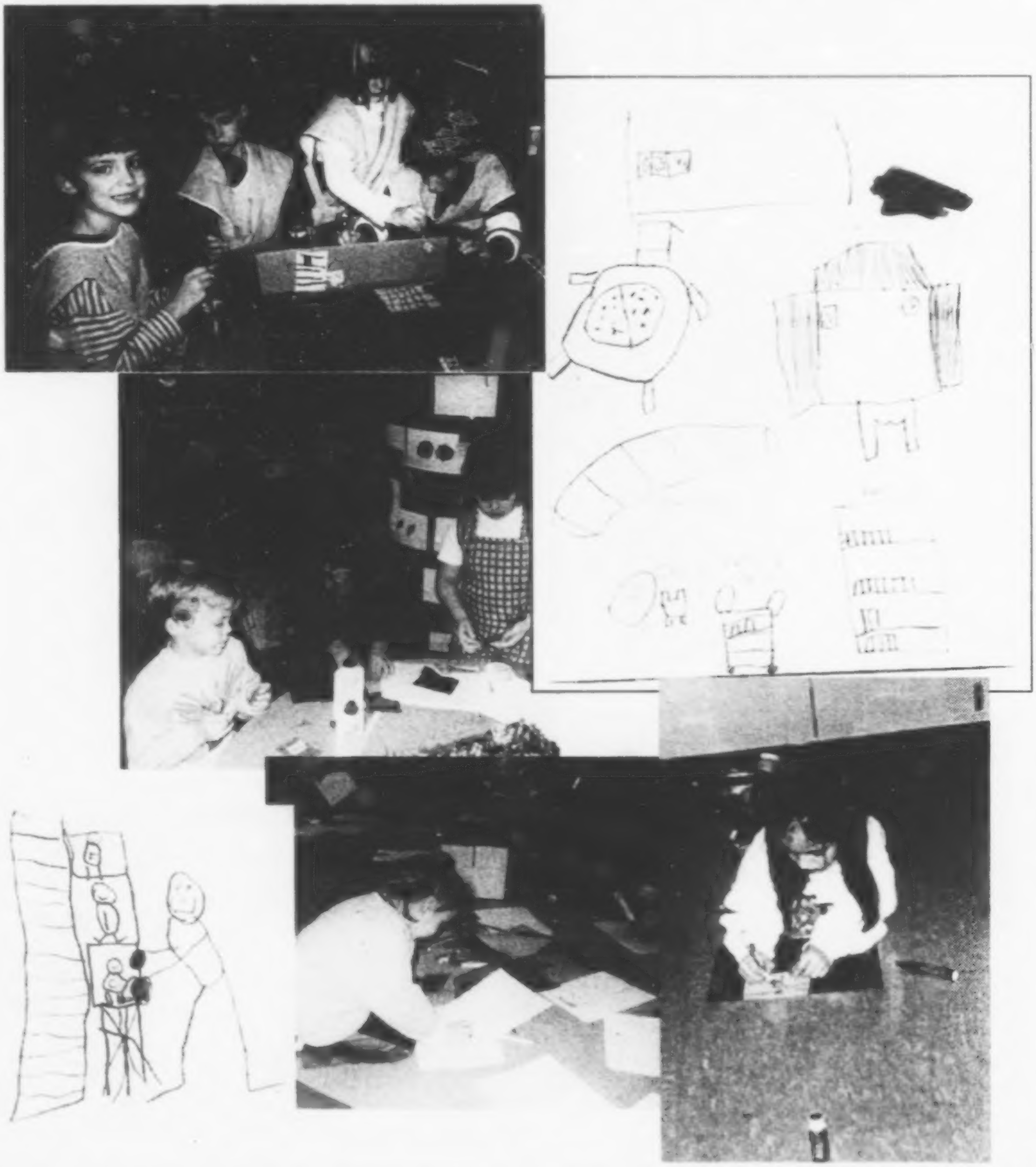
We set up a museum-style event. The project was set up around the room with typewritten explanations of what was happening in the pictures and in the displays. The children dictated most of these explanations. The parents and children came after school to view the projects. We made a tour brochure with open-ended questions for the parents to ask their child. These questions helped the children to know what was important to tell their parents about the projects. The parents and children were very excited to see their work and the work of others.

## Comments

Doing a project with children who were not in the same classroom and school was a wonderful experience. It was great to see how well the children worked together even though they had never met. It was really good to see that the children knew how to do project work and were able to carry out the project with others whom they had just met.

One of our biggest surprises was how well the final products turned out. The children only had one day to decide upon and complete their final product. The children's high-quality work was really well thought out by all of the groups.

One of the challenges of this project was trying to coordinate two schools and their schedules.



## Using the School's Learning Center to Support Project Work

### 30 Classes of Kindergarten and At-Risk Pre-kindergarten Students at Donald C. Parker Early Education Center, Machesney Park, Illinois

***Length of Project:** 1 time per week for 25 min.* ***Teacher:** Nancy Plate, Learning Center Teacher*

### Phase One

*Beginning the Project*

Projects have been initiated in the Learning Center in several ways. Some have begun with a teacher-planned catalyst such as bringing in an ant farm or displaying tools used by our custodian. Other projects have sprung from unexpected events such as having 20 young trees donated to the school or inheriting a very large gold fish.

Typic[illegible] I begin our work with whole-class webbing. Using these discussions, I note what areas indiv[illegible] lasses show interest in and work to help the students expand their experience and knowledge in those areas.

### Phase Two

*Developing the Project*

Even with time and space constraints, there are still ways to offer many types of project experiences to students. I do whole-group work with webbing, discussions, generating questions, and background reading. Centers that are set up around the room are used to accommodate small groups for observational drawings, first-hand explorations, interviews, surveys, detailed reading and research, and construction. At times, teachers have allowed me to take students out of their classrooms to do additional individual work. This experience is very rewarding for the student and often results in an "Ah ha!"

Resources for our projects vary. Naturally, books are always available from our Learning Center and the local library. We are fortunate to have classroom access to the Internet. I try to have artifacts or firsthand experiences for the students to investigate. Experts have been called upon and interviewed by both the students and me.

Because of timing and logistics, field visits must be confined to the school building and the immediate outside area. This limitation has not been a problem with the topics we have studied.

I try to document the students' work as the project progresses using space in the Learning Center for display. Often from viewing these displays, students from classes that are not involved with the project become interested in the material.

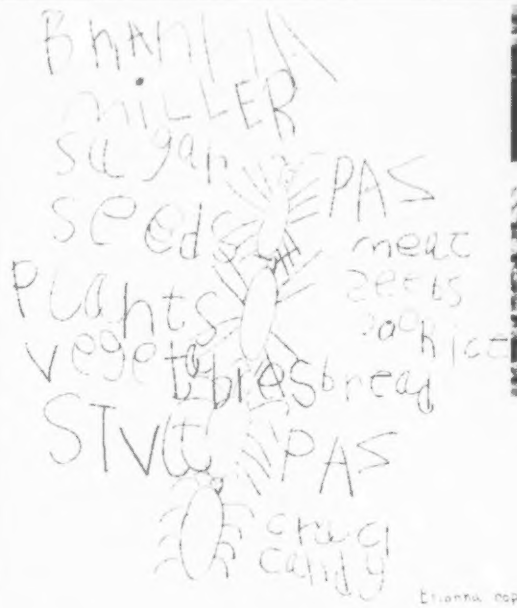
### Phase Three

*Concluding the Project*

We conclude our projects by "publishing" the students' work in notebooks. These notebooks are processed as library materials and are available for the students to check out. This procedure enables students to share their individual contributions as well as the collective work of the class with their parents. When viewing these notebooks, students and parents see not only the result of student learning but, more importantly, the process of investigation. Readers see learning represented in the form of text, drawings, graphs, and photos showing constructions and problem-solving situations.

## Comments

Each project brings its own unique challenges and learning. As a result, I consistently see growth in both the students and myself. There is always at least one student who shows a tremendous extension of self-confidence and learning during a project. One of the biggest hurdles I find is taking time for daily reflection. As difficult as finding this time is for me, I feel doing so is of the utmost importance for successful project work. Daily reflection helps me to stay focused on where the students are and where I might take them next.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candy

Erionna copied these words from our ant web

Constructing an ant colony.

Book Title ____________

Author ____________

This is what I learned from this book ____________

Here is a drawing of something I found interesting

Student's name ____________

Observing the ant farm.

# The Restaurant Project

## A Project by 6- and 7-Year-Old Students
## at Westmere Elementary School, Guilderland, New York

***Length of Project:*** *6 weeks* ***Teachers:*** *Dorine Phelan, Robert Whiteman,*
*Lynne Haley, Angie VanDerLinden*

### Phase One

*Beginning the Project*

The location of our school along a suburban shopping district and the generosity of a parent who owns several local restaurants made our topic selection easy. With two first-grade classes in adjoining rooms, we were certain that we could manage the many project groups that would inevitably stem from the topic by combining spaces, teaching assistants, and parent volunteers. The students and adults spent much time in this first phase sharing stories and experiences from restaurants and other locations where food is consumed (e.g., food courts, supermarkets). After this initial sharing, students were asked to sketch, from memory, a place where they had eaten out. These sketches were shared, and the teachers wrote the ideas on Post-it notes, without attempting to group ideas. Later in phase one, these notes were used, along with new ideas and questions, to create a class web. With the guidance of the teachers, the notes were easily moved around into categories, such as the kitchen, the menu, and the wait staff.

### Phase Two

*Developing the Project*

The children suggested sites we could visit and experts we could interview for fieldwork. One child naturally suggested his father, who owns a restaurant and a bakery in a nearby shopping plaza. We also contacted a chain restaurant and a gourmet shop in the same plaza so we could make one trip but visit all four sites while we were there.

Guided by teachers, teaching assistants, and parent volunteers, groups visited the sites that would best answer their questions. Armed with clipboards, pencils, planned questions, and digital cameras, groups investigated each facility, interviewing chefs, managers, wait staff, and bakers. Children took notes, made observational sketches, and asked questions, while teachers took digital photos and asked further guiding questions.

Upon returning from the field sites, the children shared their sketches and notes with each other. They wrote captions for the digital photos and organized all that they had heard and seen. The children decided that the best way to represent what they had learned was to re-create a restaurant in our adjoining classrooms. Groups made models of food from clay; set up tables with place settings; set up a bar with its many glasses; built and stocked a wait station; made menus; created a cash register and hostess stand; and built the kitchen with its wood-fired pizza oven, prep stations, and dishwasher. The children frequently referred to their sketches and digital photos to guide their representations as they worked. Much productive talk showed how they were applying what they had learned on site to make their displays as realistic as possible.

### Phase Three

*Concluding the Project*

It was only natural that once the restaurant and its kitchen were built we should have a grand opening and invite "customers." It was the students' idea to invite their fifth-grade buddy classes. With the restaurant opening looming, work intensified, and the students added missing elements. On opening day, the customers were greeted at the door, handed a menu, and shown to a seat. As their orders were taken and the kitchen worked away, the noise increased, and the ambiance created by the student singing in the corner was quickly lost. Workers got confused, and job descriptions were forgotten. After the initial visitation, both classes sat down to discuss some of the problems and their solutions, and they participated in a "rehearsal." By the time the second group came, the restaurant was running more smoothly, and the customers seemed less frazzled. Parents and families visited the project during a "morning coffee."

### Comments

Some children who had not yet shown a great deal of confidence or a particular area of strength seemed to "come into their own" during this project. Also, the success of our fieldwork, which we needed to complete in limited time, was due to the parents who owned the businesses and the other businesspeople understanding what the children needed to accomplish during their visits. We had introduced parents to the Project Approach through weekly newsletters and parent workshops, and we had contacted the other businesspeople before our field trip to "educate" them with respect to project work. In retrospect, we wish the children had more of an opportunity to express the facts and information they learned in a more succinct way during the culminating event. The role playing of the restaurant in action was hectic at times, and some of the information was lost in the shuffle of the excitement of the visitors. We noticed that students demonstrated their knowledge and skills most prominently during phase two, as they worked cooperatively in groups to represent their learning.

This is the
DSHwsR

## Studying Our Community

### A Project by Second-Grade Students
### at Grafton Elementary School, Grafton, Illinois

***Length of Project:** 3 months* ***Teacher:** Dot Schuler*

| | |
|---|---|
| Phase One | *Beginning the Project*<br>As our Animal Project approached culmination, children began discussing ideas for the next project. Perhaps because of our local eagle-watching field experience, the topic of our own community, Grafton, gradually became one of unanimous interest. After creating a topic web and telling personal stories, children began contemplating and documenting ideas for open-ended questions about Grafton. The teacher encouraged children to formulate questions for investigation. Several local buildings of interest became potential small-group investigations. Questions about local vegetation and littering were also expressed. Essays describing questions for investigation and sources to be used were drafted, proofread, and published for display. |
| Phase Two | *Developing the Project*<br>The mayor visited our classroom, bringing photographs of local historical buildings. A walk to locate the buildings followed her visit. Based on questions formulated in the children's essays, we also visited places of interest to the children: the local grocery, bait shop, two gift/antique shops, three churches, City Hall, and a bed-and-breakfast inn. Frequently, community member passers-by would stop to answer the children's questions or invite them into their places of business. Children used clipboards to hold notes, observational drawings, and rubbings of historical markers. After each walk, the teacher recorded children's collective notes on chart paper and displayed them for reference. While several small groups investigated local buildings, other groups chose to learn about the Illinois River and local plants and trees. Our collective notes and sketches were resources for children building scale models, writing books, and making webs of information about local buildings. Using historical documents, a time line was made to show the building or razing of educational buildings on school grounds. The group studying the river used data from the Internet to make a map of the confluence of the Illinois and Mississippi Rivers and a Venn diagram comparing and contrasting the two rivers. Interviews were used to collect data and create mobiles to represent local trees and plants. One child wrote an acrostic poem about littering, making enough copies to hang in local store windows. He also wrote a letter of concern to the mayor. |
| Phase Three | *Concluding the Project*<br>Culmination began in the school cafeteria where family, school, and community members gathered for refreshments. Then, second-graders accompanied their guests as they toured the classroom. Printed copies of our book *Things about Grafton That You Never Knew* were purchased by many attendees. Additional copies were sold at local stores throughout the year. As a result of the litter investigation, the mayor donated a trashcan for the front of our school building in order for the children to help keep the community clean. The following day, our class toured the town with plastic bags, collecting litter and depositing it in local trash receptacles. Not only had they learned from each other through small-group investigations, but also they learned firsthand about being responsible citizens. |

## Comments

Our Grafton project had emphasized the enthusiastic availability of local resources. When studying a topic in the immediate environment, as in project work, parents and community members share a special interest. In addition to community support, our building principal accompanied us on one of our walks. Afterward, he shared his interest in noting how diligently the children worked on taking notes. The children became especially aware of various individual talents as they helped each other work on representations. They each exhibited togetherness, group entry skills, and concern for completion, as those who were finished eagerly asked others if they needed help. Studying our local community had emphasized the camaraderie of our own classroom community.

Children revisited several local buildings to record more notes and observational drawings.

Two children worked diligently on a scale model of the local fudge shop . . .

All About The Fudge Shop

while one member of the interest group worked on writing a book about the shop.

At culmination, second-graders escorted guests around the classroom and explained the various representations.

# The Book Project

## A Project by Second- and Third-Grade Students at the University of Alberta Child Care Centre, Edmonton, Alberta, Canada

***Length of Project:*** *12 weeks* ***Teachers:*** *Julie Gellner, Carmen Strydhorst, Tina Steele, Tera Wollard, Cristina Milne*

**Phase One**

### *Beginning the Project*

The seeds of the Book Project were sown the year before it was launched. At that time as part of a comprehensive writing experience, the children wrote and illustrated original stories, and then we published each book in hardcover editions. On a "Meet the Author" evening, Dr. Chard and Julie Gellner started to talk about the possibility of extending this experience from the writing and illustrating of a book to an in-depth study of all aspects of books. As we talked, it became evident how rich this study could be. The possibilities for areas of inquiry were vast. During the early phase of the project, the children represented their existing knowledge of books in many ways, including surveys and graphs of their favorite books, authors, and genres; webs about the life of authors they had read; detailed maps of local bookstores; comprehensive lists of what they already knew about books; and drawings of scenes from favorite books.

**Phase Two**

### *Developing the Project*

As the research in phase two began, the children's interests led them to diverse explorations. One group looked at illustrations and found that illustrations come in many forms and materials. They created illustrations using a variety of materials. In the research process, they interviewed a local illustrator. Some of the questions they asked were whether the text or the story comes first, what kind of equipment is used to reproduce 3D pictures such as collage, and do authors and illustrators meet in the process of collaborating on a book. Another group, spurred on by their love of specific books, decided to do an in-depth study of the works or life of Laura Ingalls Wilder and Mary Pope Osborne. A contingent of Harry Potter enthusiasts came up with the idea of creating a display based on the Potter series. They highlighted characters, artifacts, and a fantasy game called "Quidditch" central to the action of these books. Flying brooms were fashioned of raffia and dowels, and the magical winged balls were built of clay and pipe cleaners. Modified rules for the flying sport were listed and carefully outlined. Finally, the builders in our class worked together to construct a small library that would be the future home of the wonderful novels the children were writing at this time and would later publish as a culmination to the entire project. Throughout this phase, we had visiting experts and field visits to help the children with their research. Some highlights were our visit to a bookstore, the public library, and a local printing company. Our visitors included the children's book illustrator mentioned above, a content editor who had recently completed a children's sports series, one of our fathers who "dissected" a book so that we could examine how it was "built," and Dr. Chard, the Director of the Centre, who shared a collection of her original watercolor images chronicling her day-to-day life. These paintings form the borders for letters to her grandchildren who live in other parts of the world.

**Phase Three**

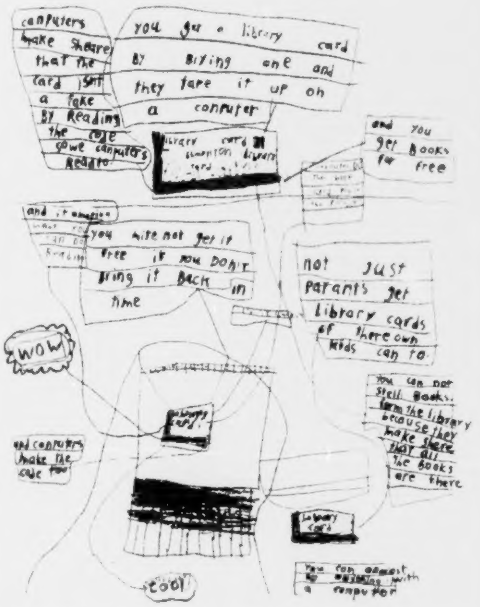
### *Concluding the Project*

The Book Project concluded as it began—with a celebration of the children's published writing. In this last stage of the study, we worked on the publishing process as stories were brought to publication standard, illustrations were completed, books were formatted, and children had the experience of experimenting with many designs for binding their work. Parents enthusiastically took part in this culminating experience by joining together one evening for a work bee to create the hardbound copies of the books that would be shared on the Meet the Author night. On the night of this celebration, the children wore several hats. As authors, they shared their unique publications with great pride, accomplishment, and tenacity—reading and rereading for the many visitors who delighted in the stories. As researchers, they took guests around to the various bulletin boards and display cases showing their own work and the work of their classmates. They graciously answered questions that arose about the work displayed and the process of writing a book. And as guides, they walked their guests through the impressive gallery of images and constructions highlighting the illustrations made of plasticene, fabric, found objects, natural objects, watercolor, and colored pencil.

## Comments

Because the Child Study Centre has had a grade 3 group for two years and a grade 2 group for three years, many of the learners who participated in the Book Project have spent as many as four to five years—all the years of their formal schooling—working with the Project Approach. Visitors to the site were impressed with the ease with which the children suggested and carried out ideas for multiple representations to show what they already knew about the subject of books. The sophistication and number of high-level questions generated to guide their own study was a revelation to both outsiders and our team as well. As the research process developed and deepened, the children's abilities for collaboration, negotiation, risk taking, and creativity indicated the possibilities that can occur when children are seen and valued as co-creators in the learning environment.

How do you get a library card?



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You can almost do everything with a conputer

library card
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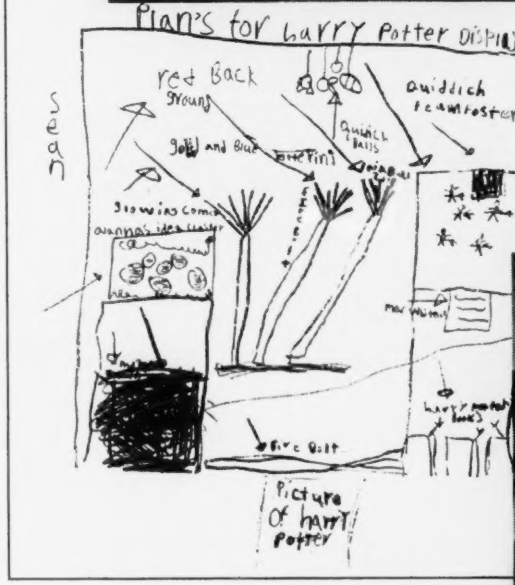

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## *Section 5*

# Resources for Implementing the Project Approach

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# The Project Approach

### Lilian G. Katz

Although project work is not new to early and elementary education (Sharan & Sharan, 1992), interest in involving children in group projects has been growing for several years. This renewed interest is based on recent research on children's learning (Kandel & Hawkins, 1992), a trend toward integrating the curriculum, and the impressive reports of group projects conducted by children in the pre-primary schools of Reggio Emilia (Edwards et al., 1993).

## What Is a Project?

A project is an in-depth investigation of a topic worth learning more about. The investigation is usually undertaken by a small group of children within a class, sometimes by a whole class, and occasionally by an individual child. The key feature of a project is that it is a research effort deliberately focused on finding answers to questions about a topic posed either by the children, the teacher, or the teacher working with the children. The goal of a project is to learn more about the topic rather than to seek right answers to questions posed by the teacher.

## The Place of Project Work in the Curriculum

Advocates of the project approach do not suggest that project work should constitute the whole curriculum. Rather, they suggest that it is best seen as complementary to the more formal, systematic parts of the curriculum in the elementary grades, and to the more informal parts of the curriculum for younger children. Project work is not a separate subject, like mathematics; it provides a context for applying mathematical concepts and skills. Nor is project work an "add on" to the basics; it should be treated as integral to all the other work included in the curriculum.

*Systematic instruction:* (1) helps children *acquire* skills; (2) addresses *deficiencies* in children's learning; (3) stresses *extrinsic* motivation; and (4) allows teachers to direct the children's work, use their expertise, and specify the tasks that the children perform. *Project work,* in contrast: (1) provides children with opportunities to *apply* skills; (2) addresses children's *proficiencies;* (3) stresses *intrinsic* motivation; and (4) encourages children to determine what to work on and accepts them as experts about their needs. Both systematic instruction and project work have an important place in the curriculum.

For older children able to read and write independently, project work provides a context for taking initiative and assuming responsibility, making decisions and choices, and pursuing interests. For younger children, project work usually requires teacher guidance and consultation.

## Themes, Units, Projects: Some Important Distinctions

Related to project work are themes and units. A theme is usually a broad concept or topic like "seasons," or "animals." Teachers assemble books, photographs, and other materials related to the theme through which children can gain new awareness. However, in theme work children are rarely involved in posing questions to be answered or taking initiative for investigation on the topic. Nevertheless, theme topics can provide good subtopics for project work.

Units usually consist of preplanned lessons and activities on particular topics the teacher considers important for the children to know more about. When providing information in units, the teacher typically has a clear plan about what concepts and knowledge the children are to acquire. As with themes, children usually have little role in specifying the questions to be answered as the work proceeds.

Both themes and units have an important place in the early childhood and elementary curriculum. However, they are not substitutes for projects, in which children ask questions that guide the investigation and make decisions about the activities to be undertaken. Unlike themes and units, the topic of a project is a real phenomenon that children can investigate directly rather than mainly through library research. Project topics draw children's attention to questions such as: How do things work? What do people do? and What tools do people use?

## Activities Included in Project Work

Depending on the ages and skills of the children, activities engaged in during project work include drawing, writing, reading, recording observations, and interviewing experts. The information gathered is summarized and represented in the form of graphs, charts, diagrams, paintings and drawings, murals, models and other constructions, and reports to peers and parents. In the early years, an important component of a project is dramatic play, in which new understanding is expressed and new vocabulary is used.

Project work in the early childhood and elementary curriculum provides children with contexts for applying the skills they learn in the more formal parts of the curriculum, and for group cooperation. It also supports children's natural impulse to investigate things around them.

### The Phases of a Project

In *Phase 1* of a project, called *Getting Started* by Katz and Chard (1989), the children and teacher devote several discussion periods to selecting and refining the topic to be investigated. The topic may be proposed by a child or by the teacher.

Several criteria can be considered for selecting topics. First, the topic should be closely related to the children's everyday experience. At least a few of the children should have enough familiarity with the topic to be able to raise relevant questions about it. Second, in addition to basic literacy and numeracy skills, the topic should allow for integrating a range of subjects such as science, social studies, and language arts. A third consideration is that the topic should be rich enough so that it can be explored for at least a week. Fourth, the topic should be one that is more suitable for examination in school than at home; for example, an examination of local insects, rather than a study of local festivals.

Once the topic has been selected, teachers usually begin by making a web, or concept map, on the basis of "brainstorming" with the children. Displaying a web of the topic and associated subtopics can be used for continuous debriefing discussions as the project work proceeds. During preliminary discussions the teacher and children propose the questions they will seek to answer through the investigation. During the first phase of the project, the children also recall their own past experiences related to the topic.

*Phase 2, Field Work,* consists of the direct investigation, which often includes field trips to investigate sites, objects, or events. In Phase 2, which is the heart of project work, children are investigating, drawing from observation, constructing models, observing closely and recording findings, exploring, predicting, and discussing and dramatizing their new understandings (Chard, 1992).

*Phase 3, Culminating and Debriefing Events,* includes preparing and presenting reports of results in the form of displays of findings and artifacts, talks, dramatic presentations, or guided tours of their constructions.

### Projects on Everyday Objects

One example of an investigation of an everyday object in the children's environments is a project called "All About Balls." A kindergarten teacher asked the children to collect from home, friends, relatives, and others as many old balls as they could. She developed a web by asking what the children might like to know about the balls. The children collected 31 different kinds of balls, including a gumball, a cotton ball, a globe of the earth, and an American football (which led to a discussion of the concepts of sphere, hemisphere, and cone). The children then formed subgroups to examine specific questions. One group studied the surface texture of each ball, and made rubbings to represent their findings; another measured the circumference of each ball with pieces of string; and a third tried to determine what each ball was made of.

After each group displayed and reported its findings to the others, the class made and tested predictions about the balls. The children and the teacher asked which balls would be the heaviest and which the lightest, how the weight of the balls was related to their circumference, which balls would roll the farthest on grass and gravel surfaces after rolling down an inclined plane, and which balls would bounce the highest. While the children tested their predictions, the teacher helped them explore such concepts as weight, circumference, and resistance. Following this direct investigation, the children engaged in a discussion about ball games. They discussed which balls were struck by bats, clubs, mallets, hands and feet, racquets, and so forth.

### Conclusion

A project on a topic of real interest to children, such as the "All About Balls" project described here, involves children in a wide variety of tasks: drawing, measuring, writing, reading, listening, and discussing. From working on such a project, children learn a rich new vocabulary as their knowledge of a familiar object deepens and expands.

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# Issues in Selecting Topics for Projects

## Lilian G. Katz and Sylvia C. Chard

Unlike units and themes in the early childhood and primary curriculum, projects are defined as children's in-depth investigations of various topics—ideally, topics worthy of the children's time and energy. Usually the project is the work of a whole class, typically working in small groups on subtopics related to the overall one selected. As increasing numbers of teachers and school districts incorporate project work into their curriculum, questions have been raised about what to consider when selecting project topics. In this Digest, we address the main issues and suggest a list of topic selection criteria.

### The Project Approach

Project work—and thus the choice of topics—can help prepare students for participation in a democratic society. In the service of democratic goals, choosing good topics for investigation can deepen children's understanding and knowledge of others' contributions to their well-being. Furthermore, during project work, many processes and skills useful for participation in a democracy are applied: resolving conflicts, sharing responsibility for carrying out plans, making suggestions to one another, and so forth.

The Project Approach can be useful with groups of children from diverse ability and cultural backgrounds because topics can be chosen from the children's immediate environment. A sense of community is easier to develop when all are able to discuss a project topic with some confidence (Greenwald & Hand, 1997; Gutwirth, 1997).

As the children get to know each other, they can more readily appreciate the fact that others have different experiences and interests. However, we suggest a distinction between a child's *culture* and a child's *heritage* in the choice of topics. A child's culture refers to his or her current day-to-day experiences and environment; the child's heritage refers to historic and ancestral origins of his or her families. In the early years, project topics are best taken from the children's culture rather than heritage, though aspects of the latter can and should be introduced to the children in other parts of the curriculum.

General factors to consider in selecting topics include (1) characteristics of the particular group of children, (2) the geographic context of the school, (3) the school's wider cultural community, (4) the availability of relevant local resources, (5) the topic's potential contribution to later learning, and (6) the teacher's own knowledge of the topic. More specific criteria include the topic's potential interest to the children and its relationship to their particular daily lives. Occasionally, a teacher is responsible for children whose personal situations are such that a topic ordinarily appropriate would not be selected. For example, many teachers of young children have guided them through detailed study of the local hospital. However, it might be the case that a child has had a very recent traumatic experience or a frightening hospitalization experience. In such a situation, the study of that topic might best be postponed until a later time.

### Children's Interests as a Guide to Topic Selection

Using children's interests as a starting point in topic selection may lead to choosing appropriate topics, but this approach also presents several potential pitfalls. First, what does it mean to say that an individual or group of children is "interested" in a topic? Interests can be of relatively low educational value; Wilson (1971) gives the example of a young boy in his class whose main "interest" for some time was how to pull off the legs of a fly! Children's interests may actually represent passing thoughts, fleeting concerns, phobias, obsessions, or fascination with media-related characters.

Second, just because children express interest in a given topic does not mean that their interest deserves to be strengthened by the serious attention of the teacher. For example, the publicity given to movies may provoke children's interest in a certain topic. Several teachers we know responded to young children's spontaneous discussions of the Titanic tragedy that had been stimulated by the movie. Although the children's interest in the topic was clear, first-hand investigations of the topic were obviously not possible. Teachers can deal with this interest in ways that do not include expending the time and energy necessary to develop a project around it. For example, children can discuss their reactions to the movie, can engage in spontaneous dramatic play involving rescue operations or icebergs, draw and paint them, and read books about them during discussions in which the teacher helps them interpret the facts and events. In other words, we suggest making a distinction between providing opportunity for child-initiated spontaneous activity about a topic and investing in a long-range effort focused on it.

Third, one of the responsibilities of adults is to help children to develop new intellectual interests. Children's awareness of their teacher's real and deep interest in a topic worthy of their investigation, for example, can stimulate their own interest in the topic as well.

Fourth, we suggest that a topic should reflect our commitment to taking children and their intellectual powers seriously, and to treating children as serious investigators. It is easy to underestimate the satisfaction and meaning children gain from the hard work of close observation of nearby phenomena.

## Choosing Exotic or Fanciful Topics

Sometimes adults promote exotic topics for projects in the hope of motivating children, especially those who often seem reluctant to join in the work. For example, projects revolving around the rain forest undertaken in northern Illinois schools may entice some youngsters into enthusiastic participation, and studies of medieval castles undertaken in tropical Australian schools can arouse some children's animated participation.

Our experience indicates that young children can be equally intrigued, however, by close observation of their own environments, whether they are a prairie, a cornfield, the seashore, a desert, an urban market, or a nearby bike shop. Children do not have to be fascinated, spellbound, enchanted, or bewitched by a topic. A main aim of project work in the early years is to strengthen children's dispositions to be interested, absorbed, and involved in in-depth observation, investigation, and representation of some worthwhile phenomena in their own environments.

If a project topic is exotic, it is by definition too remote for the children to be able to contribute the kinds of predictions, hypotheses, and questions that are at the core of investigation, and thus their dependence on the teacher and secondary sources will be increased. Ideally, project work is the part of the curriculum in which children are encouraged to take initiative, to influence the direction of their own work, and to accept responsibility for what is accomplished.

Topics selected to amuse or entertain children (e.g., mermaids, teddy bears, or the circus) are more *fanciful* than they are encouraging to development of children's imagination. In good project work, by contrast, children have ample opportunity to use and strengthen their imaginative powers. For example, they can share and represent their own memories related to the topic, predict what they will find before going on a field trip, or speculate about the answers to questions to be asked in an interview of a local expert.

## Accountability Concerns

*Optimal Use of School Time.* Concern for optimal use of school time includes assessing whether the topic is likely to be studied closely outside of the school. An in-depth investigation of local insects and plants is unlikely to be undertaken by many individual families at home. However, many families as well as television programs provide extensive information about holidays, legends, and local customs.

*Curriculum Requirements.* Most official curriculum guides are cast in such broad terms that it is possible to select good project topics from among the lists of subjects mandated for coverage. Choosing topics that have a clear link to the official state or local curriculum guides is a good idea; it helps reassure parents that their children's education conforms to official guidelines.

## Criteria for Choosing Projects

Based on the issues raised above, we offer a tentative set of criteria for topic selection as follows. A topic is appropriate if:

- it is directly observable in the children's own environments (real world);
- it is within most children's experiences;
- first-hand direct investigation is feasible and not potentially dangerous;
- local resources (field sites and experts) are favorable and readily accessible;
- it has good potential for representation in a variety of media (e.g., role play, construction, writing, multidimensional, graphic organizers);
- parental participation and contributions are likely, and parents can become involved;
- it is sensitive to the local culture as well as culturally appropriate in general;
- it is potentially interesting to many of the children, or represents an interest that adults consider worthy of developing in children;
- it is related to curriculum goals and standards of the school or district;
- it provides ample opportunity to apply basic skills (depending on the age of the children); and
- it is *optimally* specific—not too narrow and not too broad (e.g., a study of the teacher's own dog or "buttons" at one end, and the topic of "music" or "the seasons" at the other).

## Conclusion

Teachers have the ultimate responsibility for selecting the topics for projects undertaken by their pupils. But the number of possible topics for projects is so large that it is a good idea to have some bases for deciding which are appropriate to the children's intellectual development. The best project topics are those that enable children to strengthen their natural dispositions to be interested, absorbed, and involved in in-depth observation and investigation, and to represent that learning in a wide variety of ways in their classrooms.

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# Curriculum Disputes in Early Childhood Education

## Lilian G. Katz

Disputes concerning curriculum and teaching methods go back a long way in the field of early childhood education. Over the years, many different terms have been used to capture the opposing positions. In recent years, the term *academic* has come to describe those parts of the early childhood curriculum intended to help children master the basic skills involved in literacy and numeracy (Jacobson, 1996). From the academic—or instructivist—perspective, the young child is seen as dependent on adults' instruction in the academic knowledge and skills necessary for a good start for later academic achievement (see Katz, 1996).

This perspective is in direct contrast to the active and interactive curriculum assumed by proponents of the constructivist approach, who see young children as active constructors of knowledge; a major goal of a constructivist curriculum, then, is to provide ample opportunity for active construction of knowledge. This Digest considers instructivist and constructivist approaches to early childhood education and suggests that attention to children's intellectual development may inadvertently be overlooked by both sides. The main thesis here is that just because children are not engaged in formal academic instruction does not mean that what they are doing is sufficient to support their *intellectual* development.

### Why Has the Academic Approach Grown in Popularity?

Several factors may account for increasing pressure to introduce children to academics (e.g., in literacy and numeracy skills) as early as the preschool and kindergarten years.

One factor is the increasing demand and widening expectation that preschool and kindergarten programs ensure children's readiness for the next grade or class level. This phenomenon is part of a traditional tendency at every level of education to push down curriculum expectations from older to younger children.

Another factor may be that the traditional importance given to spontaneous play as young children's natural way to learn may seem less urgent today than a half a century ago when, for most children, opportunities and artifacts for play were less plentiful than today, especially in the home.

Much of the current contentiousness between the "instructivists" and "constructivists" revolves around the extent to which formal academic instruction may be appropriate or even essential for those young children whose early environments may not provide sufficient experiences for spontaneous informal learning of basics such as the alphabet and the names of colors and shapes.

On the constructivist side, it is assumed that child-initiated exploration, well "scaffolded" by adults, is the developmentally appropriate way to support children's learning. By contrast, those favoring a large component of formal instruction in basic academic skills put children in a passive-receptive role of internalizing the transmitted knowledge and systematically practicing the literacy and numeracy skills to be learned.

It is useful to keep in mind that today most classes offer some mix or blend of these two positions.

### How Can We Distinguish Academic from Intellectual Goals?

Academic tasks are typically carefully structured, sequenced, and decontextualized small bits of information that often require some small group or individual instruction by a knowledgeable adult. They include exercises designed to help achieve mastery of tasks. The academic tasks in the early childhood curriculum usually address facts and skills that the majority of children are unlikely to learn spontaneously or by discovery, although under favorable conditions, many children do so. These tasks frequently involve memorizing lists or symbols, responding to questions that have correct answers, and practicing routine tasks that can be assessed as right or wrong.

Intellectual goals, on the other hand, address *dispositions*, that is, habits of mind that include a variety of tendencies to interpret experience (Katz, 1993). The intellectual dispositions include the dispositions to make sense of experience, to theorize about causes and effects, to hypothesize explanations to account for observations, and to analyze and synthesize whatever information is available. These dispositions can be seen when children are engaged in investigations of things around them in the course of which they persist in seeking answers to their questions and solutions to the problems they encounter. Examples of these intellectual dispositions are shown vividly in Beneke's (1998) report of a preschool car project and in the "Shoe & Meter" project of the children in Reggio Emilia (Reggio Children, 1997).

### Does Research Favor Constructivism or Instructivism?

More than half a century ago, Dorothy Gardner (1942) attempted to put to rest once and for all a similar controversy raging at that time about curriculum and teaching methods by conducting a comparative study of two nursery schools. School A was characterized by what would be called today "developmentally appropriate practice," emphasizing creativity and spontaneous play. School B was characterized by formal teacher-directed activities, now commonly referred to as "academic" in focus. Despite Gardner's findings in favor of School A, the debate over curriculum and methods resumed barely a generation later.

In the past 20 years, similar comparative studies have been reported (see, for example, Consortium for Longitudinal

Studies, 1983; Schweinhart, Barnes, & Weikart, 1993; Schweinhart & Weikart, 1997; Marcon, 1992, 1995). The results of these studies have been somewhat mixed, though generally close to Gardner's earlier findings that those children enrolled in preschools on the constructivist side of the dichotomy fare better in school *in the long run*—especially the boys (Miller & Bizzell, 1983; Marcon, 1992). Longitudinal studies comparing "instructivist" and "constructivist" approaches suggest that the early gains of children in the "instructivist" preschool curricula do not last more than a year or two.

### What about Children's Intellectual Development?

One of the major concerns about this historical squabbling over goals and methods is that both sides in the struggle may overlook curriculum and teaching methods beyond the traditional dichotomy. Years of experience of observing early childhood classrooms suggest that both sides underemphasize and undervalue a third option—namely, curriculum and teaching methods that address children's *intellectual* development as distinct from the instructivist emphasis on *academic* learning and the *constructivist* emphasis on children's play and self-initiated learning.

Constructivist theory does not neglect children's intellectual development; however, constructivist theory is sometimes misinterpreted. Believing that children "construct their own knowledge," some adults do little more than set out a variety of activities that children enjoy, while studiously avoiding formal instruction in basic academic skills. Indeed, it is not surprising that observers of nonacademic preschool and kindergarten classes who have little knowledge of young children (e.g., E. D. Hirsch, Jr.) criticize "progressive" and "constructivist" classes as banal, vacuous, overemphasizing play and fun, and wasteful of children's capacities.

At the same time, a strong academic approach may undermine the disposition to use the knowledge and skills so intensely instructed. The disposition to be readers or, similarly, to be ready users of mathematical concepts and skills often painfully acquired may be damaged by premature instruction, given the amount of drill and practice usually required for success in mastering these skills at an early age.

### What Teaching Methods Support Children's Intellectual Development?

An appropriate curriculum addresses strengthening and using the intellectual dispositions, offers good processes about rich content, and results in high-quality products. For these reasons, many teachers have been incorporating project work into the curriculum (Katz & Chard, 1989; Beneke, 1998). Project work not only provides contexts for the intellectual dispositions involved in the investigations that children undertake, but it also provides texts and pretexts for children to make meaningful and functional *use* of the academic skills they are taught during the "instructive" part of the curriculum. Thus, we might "trichotomize" the early childhood curriculum so that it is focused on at least a trio of goals: (1) social/emotional development *and* (2) intellectual development *and* (3) the acquisition of meaningful and useful academic skills.

Excellent examples of meaningful long-term projects in which children's intellects as well as growing academic skills flourish can be seen in the work of the children in the preprimary schools in Reggio Emilia, Italy (Reggio Children, 1997), as well as in reports of projects by Beneke (1998) and Helm (1998). These works demonstrate that young children can express their intellectual dispositions in the pursuit of serious topics *and* apply their emerging and academic skills *and* generate high-quality products simultaneously.

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# Child-Initiated Learning Activities for Young Children Living in Poverty

## Lawrence J. Schweinhart

Should Head Start and other preschool programs for young children living in poverty center on teacher-directed, large-group academic lessons or on teacher-supported, child-initiated learning activities? The concerns reflected in this long-standing debate are that an exclusively teacher-directed approach fails to encourage children's social and emotional development and creativity, while an approach based exclusively on child-initiated activities may not sufficiently stimulate poor children's academic development. These concerns are echoed today in the struggle of early childhood educators to cope with academic-learning mandates that conflict with their own child-centered dispositions, particularly in school districts that have been less successful in helping children achieve academic success. This Digest discusses the findings of empirical studies on teacher-directed and child-initiated preschool programs.

### Long-term Preschool Curriculum Comparison Studies

Three long-term preschool curriculum comparison studies began in the 1970s—the High/Scope Preschool Curriculum Comparison Study (Schweinhart & Weikart, 1997), the Louisville Head Start Study (Miller & Bizzell, 1983), and the University of Illinois Study (Karnes, Schwedel, & Williams, 1983). All three included the Direct Instruction model—which offered scripted, teacher-directed academic instruction—and a Nursery School model, in which children initiated their own learning activities with minimal teacher support. The High/Scope study included the High/Scope model, in which children initiated learning activities with substantial teacher support. The Louisville and Illinois studies included several additional teacher-directed models and the Montessori model, which encouraged child-initiated activities with didactic materials.

These three studies found that children in Direct Instruction programs intellectually outperformed children in child-initiated-activities programs during and up to a year after the preschool program, but not thereafter. In the Louisville study, the Nursery School children showed higher verbal-social participation and increased more in ambition and aggressiveness than did the Direct Instruction children, but both groups scored lower than their peers on inventiveness. In the Illinois study, 78% of the Nursery School group, but only 48% of the Direct Instruction group and 47% of the no-program group graduated from high school.

In the High/Scope study, the child-initiated-activities groups significantly surpassed the Direct Instruction group on 10 early adult outcomes, more than were found throughout their childhoods. Compared to the Direct Instruction group, both High/Scope and Nursery School groups had fewer members treated for emotional impairment or disturbance (6% vs. 6% vs. 47%) and more who engaged in volunteer work (43% vs. 44% vs. 11%). Compared to the Direct Instruction group, the High/Scope group had fewer members ever arrested for a felony (10% vs. 39%), ever arrested for a property crime (0% vs. 38%), reporting 10 or more acts of misconduct (23% vs. 56%), and identifying people who gave them a hard time (36% vs. 69%); and more members married and living with their spouses (31% vs. 0%) and planning to graduate from college (70% vs. 36%). Compared to the Direct Instruction group, the Nursery School group had fewer members arrested for a felony at ages 22-23 (9% vs. 34%) and ever suspended from work (0% vs. 27%).

### Planned Variation Head Start and Follow Through

The national evaluation of Planned Variation Head Start (1969-72), included some 6,000 children at 37 sites (Datta, McHale, & Mitchell, 1976). Its dozen models included the Direct Instruction model and at least two child-initiated-activities models—the High/Scope model and the Enabler model guided by local early childhood consultants. Despite the many design problems associated with a study of this size, two findings distinguished certain program groups from the other program and comparison groups:

- Teacher-directed groups had the highest scores on the achievement tests given at the end of the preschool program.
- The High/Scope group had the greatest IQ gains—23 points compared to no more than 5 points for any of the other groups.

The Follow Through Project (1967-95) was designed to follow through on Head Start by providing similar services from kindergarten through third grade. It never served more than a small fraction of the nation's children who attended Head Start, but did support the development of 20 early elementary curriculum models. A national evaluation found that although program outcomes varied more by site than by curriculum model, Direct Instruction students did significantly better than their peers in regular classes—and better than students in classes based on child-initiated learning activities—on school achievement, self-esteem, and achievement responsibility (Kennedy, 1978). Further, in a few communities, Direct Instruction researchers found evidence that some Direct Instruction students had higher ninth-grade achievement-test scores, a higher high school graduation rate than their peers, and fewer grade repetitions and absences from school (Gersten & Keating, 1987). Direct Instruction's greater success in elementary school than in preschool may have been partly because elementary-school children were better able than preschoolers to adhere to its strict rules of behavior and principles of mastery learning, and partly because elementary-school teachers more fully embraced its methods than did preschool teachers.

### Recent Short-term Preschool Studies

Six early childhood curriculum comparison studies have been conducted in the past decade: one study contrasting High/Scope classes with non-High/Scope classes, and five studies contrasting developmentally appropriate practice emphasizing child-initiated activities and developmentally inappropriate practice emphasizing teacher-directed lessons (Dunn & Kontos, 1997).

In the Training for Quality study, Epstein (1993) found that observers rated preschool classes with High/Scope-trained teachers significantly higher than preschool classes whose teachers were not trained by High/Scope. High/Scope training enabled children to plan, carry out, and review their own activities, and it helped teachers use adult-child interaction to promote children's reasoning and language skills. Observers scored children in the High/Scope classes significantly higher at the end of the school year in initiative, social relations, music and movement skills, and overall development.

Burts et al. (1992) have engaged in a program of research based on assessing teachers' developmentally appropriate beliefs and practices and related child outcomes. They found that kindergarten children in developmentally inappropriate classes exhibited significantly more stress behaviors (such as complaints of feeling sick, stuttering, fights, tremors, nervous laughter, and nail biting) than did those in developmentally appropriate classes, particularly males and African-American children.

DeVries and her associates closely observed three kindergarten classes using Direct Instruction, a constructivist approach based on child-initiated activities, and an eclectic approach. Analyzing two game-like activities, they found that the children from the constructivist class were more interpersonally interactive, with a greater number and variety of negotiation strategies and shared experiences, than children from the other two classes (DeVries, Reese-Learned, & Morgan, 1991). Although the Direct Instruction class began kindergarten with significantly higher achievement test scores than the constructivist class, the significant differences between the two classes disappeared by third grade.

Marcon (1992) identified three preschool models operated in the Washington, DC, public schools—teacher-directed, child-initiated, and "middle-of-the-road"—and examined the development of a random sample of 295 children attending these types of programs. Children from child-initiated classes showed the greatest mastery of basic reading, language, and mathematics skills, followed by children from teacher-directed classes, then children from "middle-of-the-road" classes (Marcon, 1992). At fourth grade, this same ranking of curriculum types appeared on children's grade point averages, overall and in most subject matter areas.

Similarly, in detailed observations of 62 preschool and kindergarten classes in the Los Angeles area, Stipek, Daniels, Galluzzo, and Milburn (1992) found three types of programs—didactic, academic programs in a negative social context; child-initiated-activities programs de-emphasizing academics in a positive social context; and intermediate programs between these two extremes. They found no examples of didactic, academic programs in a positive social context.

In the Academic Environments study, Hirsh-Pasek, Hyson, and Rescorla (1990) studied 90 4- and 5-year-olds in a variety of academic and child-initiated preschool programs in affluent areas in Philadelphia and Delaware and followed up 56 of them through the end of kindergarten. Preschool program type had no significant influence on children's academic or logical skills at the end of kindergarten.

The relevant evidence from these studies suggests that preschool programs based on child-initiated learning activities contribute to children's short- and long-term academic and social development, while preschool programs based on teacher-directed lessons obtain a short-term advantage in children's academic development by sacrificing a long-term contribution to their social and emotional development. On this basis, research supports the use by preschool programs of a curriculum approach based on child-initiated learning activities rather than one based on teacher-directed lessons.

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ERIC DIGEST
April 1996 • EDO-PS-96-2

# The Contribution of Documentation to the Quality of Early Childhood Education

### Lilian G. Katz and Sylvia C. Chard

The municipal preprimary schools in the northern Italian city of Reggio Emilia have been attracting worldwide attention for more than a decade. The reasons are many and have been discussed by a number of observers and visitors (see Edwards, Gandini, & Forman, 1993, and Katz & Cesarone, 1994.) While interest in what is now called the "Reggio Emilia Approach" is focused on many of its impressive features, perhaps its unique contribution to early childhood education is the use of the documentation of children's experience as a standard part of classroom practice.

Documentation, in the forms of observation of children and extensive recordkeeping, has long been encouraged and practiced in many early childhood programs. However, compared to these practices in other traditions, documentation in Reggio Emilia focuses more intensively on children's experience, memories, thoughts, and ideas in the course of their work. Documentation practices in Reggio Emilia preprimary schools provide inspiring examples of the importance of displaying children's work with great care and attention to both the content and aesthetic aspects of the display.

Documentation typically includes samples of a child's work at several different stages of completion; photographs showing work in progress; comments written by the teacher or other adults working with the children; transcriptions of children's discussions, comments, and explanations of intentions about the activity; and comments made by parents. Observations, transcriptions of tape-recordings, and photographs of children discussing their work can be included. Examples of children's work and written reflections on the processes in which the children engaged can be displayed in classrooms or hallways. The documents reveal how the children planned, carried out, and completed the displayed work.

It seems to us that high-quality documentation of children's work and ideas contributes to the quality of an early childhood program in at least six ways.

## 1. Enhancement of Children's Learning

Documentation can contribute to the extensiveness and depth of children's learning from their projects and other work. As Loris Malaguzzi points out, through documentation children "become even more curious, interested, and confident as they contemplate the meaning of what they have achieved" (Malaguzzi, 1993, p. 63). The processes of preparing and displaying documentaries of the children's experience and effort provides a kind of debriefing or revisiting of experience during which new understandings can be clarified, deepened, and strengthened. Observation of the children in Reggio Emilia preprimary classes indicates that children also learn from and are stimulated by each other's work in ways made visible through the documents displayed.

The documentation of the children's ideas, thoughts, feelings, and reports are also available to the children to record, preserve, and stimulate their memories of significant experiences, thereby further enhancing their learning related to the topics investigated. In addition, a display documenting the work of one child or of a group often encourages other children to become involved in a new topic and to adopt a representational technique they might use. For example, Susan and Leroy had just done a survey of which grocery stores in town are patronized by the families of their classmates. When Susan wanted to make a graph of her data, she asked Jeff about the graph displayed of his survey about the kinds of cereal their class ate for breakfast. With adult encouragement, children can be resourceful in seeking the advice of classmates when they know about the work done by the other children throughout the stages of a project.

## 2. Taking Children's Ideas and Work Seriously

Careful and attractive documentary displays can convey to children that their efforts, intentions, and ideas are taken seriously. These displays are not intended primarily to serve decorative or show-off purposes. For example, an important element in the project approach is the preparation of documents for display by which one group of children can let others in the class working on other aspects of the topic learn of their experience and findings. Taking children's work seriously in this way encourages in them the disposition to approach their work responsibly, with energy and commitment, showing both delight and satisfaction in the processes and the results.

## 3. Teacher Planning and Evaluation with Children

One of the most salient features of project work is continuous planning based on the evaluation of work as it progresses. As the children undertake complex individual or small group collaborative tasks over a period of several days or weeks, the teachers examine the work each day and discuss with the children their ideas and the possibilities of new options for the following days. Planning decisions can be made on the basis of what individual or groups of children have found interesting, stimulating, puzzling, or challenging.

For example, in an early childhood center where the teachers engage weekly – and often daily as well – in review of children's work, they plan activities for the following week collaboratively, based in part on their review. Experiences and activities are not planned too far in advance, so that new strands of work can emerge and be documented. At the end of the morning or of the school day, when the children are no longer present, teachers can reflect on the work in progress and the discussion which surrounded it, and consider possible new directions the work might take and what suggestions might support the work. They can also become aware of the participation and development of each individual child. This awareness enables the teacher to optimize the children's chances of representing their ideas in interesting and satisfying ways. When teachers and children plan together with openness to each other's ideas, the activity is likely to be undertaken with greater interest and representational skill than if the child had planned alone, or the teacher had been unaware of the challenge facing the child. The documentation provides a kind of ongoing planning and evaluation that can be done by the team of adults who work with the children.

### 4. Parent Appreciation and Participation

Documentation makes it possible for parents to become intimately and deeply aware of their children's experience in the school. As Malaguzzi points out, documentation "introduces parents to a quality of knowing that tangibly changes their expectations. They reexamine their assumptions about their parenting roles and their views about the experience their children are living, and take a new and more inquisitive approach toward the whole school experience" (Malaguzzi, 1993, p. 64).

Parents' comments on children's work can also contribute to the value of documentation. Through learning about the work in which their children are engaged, parents may be able to contribute ideas for field experiences which the teachers may not have thought of, especially when parents can offer practical help in gaining access to a field site or relevant expert. In one classroom a parent brought in a turkey from her uncle's farm after she learned that the teacher was helping the children grasp what a real live turkey looked like.

The opportunity to examine the documentation of a project in progress can also help parents to think of ways they might contribute their time and energy in their child's classroom. There are many ways parents can be involved: listening to children's intentions, helping them find the materials they need, making suggestions, helping children write their ideas, offering assistance in finding and reading books, and measuring or counting things in the context of the project.

### 5. Teacher Research and Process Awareness

Documentation is an important kind of teacher research, sharpening and focusing teachers' attention on children's plans and understandings and on their own role in children's experiences. As teachers examine the children's work and prepare the documentation of it, their own understanding of children's development and insight into their learning is deepened in ways not likely to occur from inspecting test results. Documentation provides a basis for the modification and adjustment of teaching strategies, and a source of ideas for new strategies, while deepening teachers' awareness of each child's progress. On the basis of the rich data made available through documentation, teachers are able to make informed decisions about appropriate ways to support each child's development and learning.

The final product of a child's hard work rarely makes possible an appreciation of the false starts and persistent efforts entailed in the work. By examining the documented steps taken by children during their investigations and representational work, teachers and parents can appreciate the uniqueness of each child's construction of his or her experience, and the ways group efforts contribute to their learning.

### 6. Children's Learning Made Visible

Of particular relevance to American educators, documentation provides information about children's learning and progress that cannot be demonstrated by the formal standardized tests and checklists we commonly employ. While U.S. teachers often gain important information and insight from their own first-hand observations of children, documentation of the children's work in a wide variety of media provides compelling public evidence of the intellectual powers of young children that is not available in any other way that we know of.

### Conclusion

The powerful contribution of documentation in these six ways is possible because children are engaged in absorbing, complex, interesting projects worthy of documentation. If, as is common in many traditional classrooms around the world, a large proportion of children's time is devoted to making the same pictures with the same materials about the same topic on the same day in the same way, there would be little to document which would intrigue parents and provide rich content for teacher-parent or child-parent discussion!

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# Problem Solving in Early Childhood Classrooms

## Joan Britz

Problem solving is the foundation of a young child's learning. It must be valued, promoted, provided for, and sustained in the early childhood classroom. Opportunities for problem solving occur in the everyday context of a child's life. By observing the child closely, teachers can use the child's social, cognitive, movement, and emotional experiences to facilitate problem solving and promote strategies useful in the lifelong process of learning.

### Learning Through Problem Solving

By exploring social relationships, manipulating objects, and interacting with people, children are able to formulate ideas, try these ideas out, and accept or reject what they learn. Constructing knowledge by making mistakes is part of the natural process of problem solving. Through exploring, then experimenting, trying out a hypothesis, and finally, solving problems, children make learning personal and meaningful. Piaget states that children understand only what they discover or invent themselves (1963). It is this discovery within the problem solving process that is the vehicle for children's learning. Children are encouraged to construct their own knowledge when the teacher plans for problem solving; bases the framework for learning in problem solving; and provides time, space, and materials.

### The Teacher's Role

Changing through problem solving is modeled by adults (Bloom, Sheerer, and Britz, 1991) and facilitated by the teacher in the classroom environment. When teachers articulate the problems they face and discuss solutions with children, children become more aware of the significance of the problem-solving process. Being a problem solver is modeled by the teacher and emulated by the children. The teacher's role is two-fold: first, to value the process and be willing to trust the learner, and second, to establish and maintain a classroom environment that encourages problem solving. It is the attitude of the teacher that must change first in the problem-solving classroom. Values and goals must be clearly defined to include a child-centered curriculum, the development of communication skills, promotion of cooperative learning, and inclusion of diverse ideas. The teacher must be willing to become a learner, too. By being curious, observing, listening, and questioning, the teacher shares and models the qualities that are valued and promoted by the problem-solving process.

### Planning for Problem Solving

A curriculum that accommodates a variety of developmental levels as well as individual differences in young children sets the stage for problem solving (Bredekamp, 1987). Choices, decision making, and a curriculum framework that integrates learning, such as Katz and Chard's project method (1989), are especially appropriate for young learners. The project approach facilitates cooperative learning and promotes diverse ideas. Donna Ogle's K-W-L (what you know, what you want to know, and what you have learned) is another method of organizing work that promotes problem solving. Themes, units, webbing, and the KWL method are all ways of organizing curriculum that can support problem solving (Britz and Richard, 1992). Beginning with the needs and interests of the children, problem solving develops from meaningful experiences important to the children. The teacher-designed curriculum provides the classroom basis for these experiences.

For example, a second grade investigation of waste materials from a classroom led one group of young children to explore the topic in an integrated way. Reading, writing, counting, measuring, interviews of community people, and science experiments were planned, initiated, and reported. Solutions to many problems posed during the investigation were tried out and some were found to be successful. Through group work, individuals were able to participate and communicate as cognitive and social needs were met. Each child, at individual levels and in individual ways, was successful within the group experience. Problem solving empowers children.

### Providing for Problem Solving

Problem solving is a skill that can be learned and must be practiced. It is facilitated by a classroom schedule that provides for integrated learning in large blocks of time, space for ongoing group projects, and many open-ended materials. The teacher provides the time, space, and materials necessary for in-depth learning.

- **Time:** Teachers can provide for problem solving by enlarging blocks of learning time during the school day. Because making choices, discussing decisions, and evaluating mistakes takes time, large time blocks best suit the problem-solving process. It is important that children know they have time to identify and solve problems.
- **Space:** Projects and group meetings may require an assessment of classroom space. Moving desks and tables together facilitates communication and cooperation in the classroom. Once the teacher has observed the patterns of traffic in the classroom, equipment can be moved or eliminated to promote problem solving.
- **Materials:** The open-ended materials that are needed for the construction and concrete solving of problems should be safe, durable, and varied. Well-marked storage units should be easily accessible to children, and materials should be available for ongoing exploration and manipulation. Access to a variety of materials encourages children to use materials in new and diverse ways. This freedom promotes problem solving.

### The Problem-Solving Model

Individuals or groups can solve problems. Group problem solving is important to young children because many diverse ideas are generated. Both individual and group processes should be included in the early childhood classroom. Becoming skillful at problem solving is based on the understanding and use of sequenced steps. These steps are:

1. Identifying the problem,
2. Brainstorming a variety of solutions,
3. Choosing one solution and trying it out, and
4. Evaluating what has happened.

Often the most difficult of these steps is identifying the problem. If Bill cries, "Alice is hitting me," the problem to be solved is not the hitting but, rather, the reason why Alice is hitting Bill. Therefore, the investigation of solutions must relate to the cause of the problem instead of its effect. Brainstorming gives children practice in communication, negotiation, and cooperation skills. Learning to express individual ideas in a diverse society is important. By choosing and trying out a solution, learners develop empathy, come to consensus, and share the responsibility of the decision. These are valued learnings in a democratic society. Finally, by evaluating the problem-solving process, children assess their choices and mistakes and learn to be independent evaluators of their work.

The process of problem solving—making choices and learning from them—is facilitated by teachers who observe, listen, and ask open-ended questions that further the process: questions such as, "What will happen if...?" and "What other ways can you think of...?" Problem solving becomes a cycle of learning when mistakes are made and different solutions have to be tried. This discovery process allows children to construct their own learnings. Most problems have more than one solution; some problems cannot be solved. Experiences with these sorts of problems promote learning in young children.

### Choosing Good Problems

Goffin (1985) provides teachers with guiding questions that will help them identify appropriate problems for young children. Some of these are:

- Is the problem meaningful and interesting?
- Can the problem be solved at a variety of levels?
- Must a new decision be made?
- Can the actions be evaluated?

Problem solving is a way to make sense of the environment and, in fact, control it. The process allows children in an increasingly diverse world to be active participants and to implement changes. By including problem solving in the early childhood classroom, we equip children with a life-long skill that is useful in all areas of learning.

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## The Project Approach

An ERIC Bibliography of Books, Documents, and Journal Articles

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## ERIC Documents

ED433146 PS027873
Title: **Distinctions between Academic and Intellectual Goals in Early Childhood Education.**
Author(s): Katz, Lilian G.
Pages: 18
Publication Date: September 1999
Notes: Paper presented at the Annual European Early Childhood Research Conference (9th, Helsinki, Finland, September 1-4, 1999).
Available from: EDRS Price MF01/PC01 Plus Postage.
Document Type: Opinion papers (120); Speeches/meeting papers (150)

Contrasting approaches to early childhood education are evident in the constructivist versus instructivist schools of thought. On one side, the child is seen as active constructor of knowledge and understanding; on the other, the child is dependent on another's instruction in knowledge and skills. This paper explores some of the implications of the traditional dichotomies in the field of early childhood education and raises issues leading to other ways to define the goals of the field. To a large extent both sides of the early childhood curriculum debate may be overlooking other options. In particular, the debate under-emphasizes and under-values a third option: namely, the importance of children's intellectual development. Differences between intellectual and academic goals and activities are outlined: while academic goals address small units of knowledge and skills, intellectual goals address dispositions or habits of mind that include a variety of tendencies to interpret experience. It is reasonable to assume that the major intellectual dispositions are in-born in all children, but that unless the curriculum provides contexts in which the intellectual dispositions can be exercised and strengthened, they may be weakened or even lost. However, a strong academic "instructivist" approach may undermine the disposition to use the very knowledge and skills so intensely instructed. Thus the appropriate curriculum for young children is one that addresses the acquisition of academic skills (for example, how to read) in such a way that the dispositions to use them are also strengthened (for example, liking to read). The paper concludes by describing project work as a context for exercising both intellectual dispositions and academic skills. Contains 30 references. (EV)

Descriptors: *Academic Achievement; Constructivism (Learning); *Early Childhood Education; Educational Needs; *Educational Objectives; *Intellectual Development
Identifiers: Project Approach (Katz and Chard)

ED430735 PS027712
Title: **Another Look at What Young Children Should Be Learning.** ERIC Digest.
Author(s): Katz, Lilian G.
Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL.(BBB34257)
Pages: 4
Publication Date: June 1999
Available from: EDRS Price MF01/PC01 Plus Postage.
Document Type: ERIC digests in full text (073)

This Digest addresses the question of what young children should be learning that will best serve their development and learning in the long term. Two major dimensions of development—normative and dynamic—are explored, and four categories of learning goals are discussed: (1) knowledge; (2) skills; (3) dispositions; and (4) feelings. The view that children learn most effectively when they are engaged in interaction rather than in receptive or passive activities is presented. The digest also discusses the risks of early academic instruction and the need for a variety of teaching methods and informal learning environments. An intellectually oriented approach in which children work together in small groups to explore their environment is recommended. (LPP)

Descriptors: *Child Development; *Early Childhood Education; Elementary School Curriculum; Experiential Learning; Learning Activities; Learning Strategies; Preschool Curriculum; Small Group Instruction; Student Projects; Teaching Methods; Young Children

Identifiers: Academic Pressure; ERIC Digests; Project Approach (Katz and Chard)

ED428886 PS027470

Title: ***Early Childhood Research & Practice,*** An Internet Journal on the Development, Care and Education of Young Children, Spring 1999.

Author(s): Katz, Lilian G., Ed.; Rothenberg, Dianne, Ed.

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL.(BBB34257)

Source: *Early Childhood Research & Practice*, v1 n1 Spr 1999 Pages: 178

Publication Date: February 27, 1999

Notes: Individual papers have been separately analyzed, see ED 418 771 and PS 027 471-477. Published biannually.

ISSN: 1524-5039

Available from: EDRS Price MF01/PC08 Plus Postage.

Availability: http://ecrp.uiuc.edu/v1n1/index.html

Document Type: Collected works—Serials (022); ERIC product (071)

Early Childhood Research and Practice (ECRP), a peer-reviewed, Internet-only journal sponsored by the ERIC Clearinghouse on Elementary and Early Childhood Education (ERIC/EECE), covers topics related to the development, care, and education of children from birth to approximately age 8. ECRP emphasizes articles reporting on practice-related research and on issues related to practice, parent participation, and policy. ECRP also includes articles and essays that present opinions and reflections. This inaugural issue of ECRP includes a brief introductory editorial (Katz and Rothenberg). The following major articles: (1) "Children's Social Behavior in Relation to Participation in Mixed-Age or Same-Age Classrooms" (28 pages) (McClellan and Kinsey); (2) "Collaborative Course Development in Early Childhood Special Education through Distance Learning" (21 pages) (Hains, Conceicao-Runlee, Caro, and Marchel); (3) "The Restructuring of an Urban Elementary School: Lessons Learned as a Professional Development School Liaison" (9 pages) (Davis); (4) "A Neophyte Early Childhood Teacher's Developing Relationships with Parents: An Ecological Perspective" (15 pages) (Sumsion); (5) "Editing: Permission to Start Wrong" (9 pages) (Clemens); and (6) "International Perspectives on Early Childhood Education: Lessons from My Travels" (12 pages) (Katz); (7) "Writing for Electronic Journals" (12 pages) (Cesarone); (8) "From Themes to Projects" (15 pages) (Chard); and (9) "ERIC Database Citations on Topics Discussed in This Issue" (48 pages). A description of new products available from ERIC/EECE is included, along with general information and links related to the journal. (EV)

Descriptors: Child Development; Cultural Context; Distance Education; *Early Childhood Education; Editing; *Educational Practices; *Educational Research; *Electronic Journals; Internet; Mixed Age Grouping; Parent Teacher Cooperation; Professional Development Schools; Scholarly Journals; Student Projects; Teaching Methods; Theory Practice Relationship; Writing for Publication

Identifiers: Project Approach (Katz and Chard)

ED429685 PS027441

Title: **The Hundred Languages of Children Exhibition: A Unique Early Childhood Education Professional Development Program.** Final Evaluation Report (September 15 to December 15, 1998).

Author(s): Abramson, Shareen; Huggins, Joyce M.

Author Affiliation: California State Univ., Fresno. Early Education Center.(BBB35483)

Pages: 119

Publication Date: February 25, 1999

Notes: Contains many pages of color photographs that may not reproduce well.

Available from: EDRS Price MF01/PC05 Plus Postage.

Document Type: Reports—Evaluative (142)

The "Exhibition of the Hundred Languages of Children" (HLC) was organized in the early 1980s by the early childhood schools in Reggio Emilia, Italy to promote the study of their educational methods and to reveal the potential of young children for learning and creative expression. This report details an evaluation of the exhibition and continuing education program held during the exhibition in 1998 at California State University in Fresno, California, "Making Connections to Reggio Emilia and Beyond: An Educational Institute." The institute consisted of four weekend courses taught by leading authorities in early childhood education. Attendees were also able to observe in the Huggins Center, a model training, demonstration, and research center in early childhood education using an exemplary curriculum influenced by the study of the Reggio Approach. The evaluation findings indicated that the HLC exhibition and the program generated an intense and a positive public response throughout the state. Feedback on the exhibit, institute, and tours was exceptionally positive and enthusiastic. The report notes that the program was successful because it provided early childhood education (ECE) training aligned to the mission and goals for ECE in the county offices of education, school districts, and other early childhood education agencies and organizations. The resulting collaboration provided needed financial resources, assisted in publicity efforts, encouraged greater participation of those interested in ECE, and led to greater public awareness of the importance and benefits of ECE. Included in the report are numerous photographs from the exhibit and institute, attendee information, and media information related to the event. (KB)

Descriptors: *Continuing Education; Early Childhood Education; *Faculty Development; *Preschool Teachers; Program Evaluation; Teaching Methods

Identifiers: Project Approach (Katz and Chard); *Reggio Emilia Approach

ED435504 PS028128

Title: **The School Bus Project.**

Author(s): Harkema, Ruth

Pages: 47

Publication Date: 1999

Notes: This article is the sixth of six articles in this second issue of a new electronic journal (See PS 028 122). Articles are each paginated independently.

ISSN: 1524-5039

Available from: EDRS Price MF01/PC02 Plus Postage.

Availability: For full text: <http://ecrp.uiuc.edu/v1n2/harkema.html>; for memory book: <http://ecrp.uiuc.edu/v1n2/memorybook/index.html>.

Document Type: Journal articles (080); Reports—Descriptive (141)

A preschool class of 4- and 5-year-old children in a Midwestern Christian school chose to study school buses as a class project. This article discusses the goals of the project; describes the three phases of the project, including the children's representation of parts of the bus; provides the teacher's reflections on the project; and presents parents' comments on the project. The article also contains a memory book that documents the project using photographs. (Author)

Descriptors: *Documentation; Experiential Learning; Learning Activities; Parent Attitudes; Parochial Schools; *Preschool Children; *Preschool Education; *School Buses; *Student Projects; Teaching Methods

Identifiers: *Project Approach (Katz and Chard); Reflective Practice; Visual Representation

ED435498 PS028122

Title: ***Early Childhood Research & Practice.*** An Internet Journal on the Development, Care, and Education of Young Children, Fall 1999.

Author(s): Katz, Lilian G., Ed.; Rothenberg, Dianne, Ed.

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL.(BBB34257)

Source: *Early Childhood Research & Practice*, v1 n2 Fall 1999 Pages: 140

Publication Date: 1999

Notes: For individual papers, see PS 028 123-128. For Spring 1999 edition, see ED 428 886. Published biannually.

ISSN: 1524-5039

Available from: EDRS Price MF01/PC06 Plus Postage.

Availability: For full text: <http://ecrp.uiuc.edu/v1n2/index.html>.

Document Type: Collected works—Serials (022)

Early Childhood Research & Practice (ECRP), a peer-reviewed, Internet-only journal sponsored by the ERIC Clearinghouse on Elementary and Early Childhood Education (ERIC/EECE), covers topics related to the development, care, and education of children from birth to approximately age 8. ECRP emphasizes articles reporting on practice-related research and on issues related to practice, parent participation, and policy. ECRP also includes articles and essays that present opinions and reflections. This issue of ECRP contains the following major articles: (1) "Instant Video Revisiting: The Video Camera as a 'Tool of the Mind' for Young Children" (George Forman); (2) "The Role of Religious Beliefs in Early Childhood Education: Christian and Buddhist Preschools in Japan" (Susan Holloway); (3) "What Should Children Learn? Making Choices and Taking Chances" (Rebecca New); (4) "A Comparison of the National Preschool Curricula in Norway and Sweden" (Marit Alvestad and Ingrid Pramling Samuelsson); (5) "Public Factors That Contribute to School Readiness" (Diane Edwards); and (6) "The School Bus Project" (Ruth Harkema). The issue concludes with an ERIC database search on international perspectives on early childhood education and a description of new ERIC/EECE publications and activities, along with general information and links related to the journal. (LPP)

Descriptors: Church Role; Cultural Influences; *Documentation; *Early Childhood Education; *Electronic Journals; Foreign Countries; National Curriculum; Parent Teacher Cooperation; Partnerships in Education; *Preschool Curriculum; Public Policy; School Readiness; Student Projects; Teaching Methods

Identifiers: Italy; Japan; Norway; Project Approach (Katz and Chard); Sweden; Video Cameras

ED428893 PS027477

Title: **From Themes to Projects.**

Author(s): Chard, Sylvia C.

Source: *Early Childhood Research & Practice*, v1 n1 Spr 1999 Pages: 16

Publication Date: 1999

Notes: Contained in PS 027 470.

Available from: EDRS Price MF01/PC01 Plus Postage.

Document Type: Guides—Non-classroom (055); Journal articles (080); Reports—Descriptive (141)

Many teachers who begin to implement the Project Approach are already familiar with a learning center or theme approach to teaching, but there are some important differences of which to be aware.

Noting that projects are especially valuable for children in undertaking in-depth study of real-world topics, this paper presents the reflections of several teachers on their experiences moving from the use of a theme approach in their classrooms to using the Project Approach. The paper is presented in two parts. The first part describes how a project on shoes undertaken by a kindergarten class might unfold, based on a synthesis of several teachers' accounts of how they proceeded with such a project. The description serves as an example of the potential of a project for the in-depth study of a topic. The second part of the paper is a commentary, interwoven with the narrative description of the project, and draws on the work of different teachers who have also carried out projects on the topic of shoes. This commentary, which features the different possibilities that may occur for teachers in different locations and working with different ages of children, also discusses a few of the challenges commonly experienced by teachers beginning to do projects, particularly the distinctions between projects and themes. (EV)

Descriptors: Experiential Learning; Instructional Innovation; Kindergarten; Primary Education; *Student Projects; Teaching Methods; *Thematic Approach

Identifiers: *Project Approach (Katz and Chard)

ED424036 PS027048

Title: **The Project Approach Catalog 2** by the Project Approach Study Group.

Author(s): Helm, Judy Harris, Ed.

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL.(BBB34257)

Pages: 146

Publication Date: November 20, 1998

Notes: For 1996 version of this catalog, see ED402068. Catalog prepared for the

Annual Meeting of the National Association for the Education of Young Children (Toronto, Ontario, Canada, November 18-21, 1998).

Available from: EDRS Price MF01/PC06 Plus Postage.

Availability: ERIC Clearinghouse on Elementary and Early Childhood Education, University of Illinois at Urbana-Champaign, Children's Research Center, 51 Gerty Drive, Champaign, IL 61820-7469 (Catalog No. 219, $10, plus $1.50 shipping in U.S.; $3 shipping elsewhere.

Document Type: Collected works—Proceedings (021); Guides—Non-classroom (055); Reports—Descriptive (141)

Projects are in-depth studies of a topic undertaken by a class, a group, or an individual child. Projects are intended to strengthen children's dispositions to be interested, absorbed, and involved in in-depth observation, investigation, and representation of worthwhile phenomena in their own environments. This Catalog on the Project Approach, the second of its kind, describes and illustrates 13 projects done by children in early childhood and elementary classrooms on topics such as: trees, paper, playgrounds, building, potatoes, balls, cars, the vet, the hospital, shoes, water, and baby blankets. In addition to the project descriptions, several articles address a variety of issues of common concern to teachers implementing the Project Approach. These include the phases of project work, project topic selection, the value of drawing in projects, introducing investigation skills with a mini-project, involving special needs students in projects, engaged learning and standards of work, and helping students at various levels of professional training to learn how to implement the Project Approach. Sections on research and implementation of the Project Approach in Canada, and on the Internet and the Project Approach (including listserv discussions), are also included. The Catalog's final section, "Resources for Implementing the Project Approach," includes four ERIC Digests, a glossary, a list of recommended books, an ERIC bibliography on the Project Approach, information on a Project Approach summer institute, and a list of contributors to the Catalog. (EV)

Descriptors: Active Learning; Cooperative Learning; Creative Development; *Discovery Learning; Early Childhood Education; Educational Research; Elementary Education; Foreign Countries; Freehand Drawing; Group Activities; Higher Education; Instructional Innovation;

Internet: *Learning Activities; Problem Solving; Special Needs Students; *Student Projects; Teacher Education; Teaching Methods

Identifiers: Canada; *Project Approach (Katz and Chard); University of Alberta (Canada)

ED424977 PS027125

Title: **Rearview Mirror: Reflections on a Preschool Car Project.**

Author(s): Beneke, Sallee

Author Affiliation: National Parent Information Network, Champaign, IL.(BBB34525); ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL.(BBB34257)

Pages: 91

Publication Date: November 1998

Notes: Photographs may not reproduce well.

Available from: EDRS Price MF01/PC04 Plus Postage.

Availability: ERIC Clearinghouse on Elementary and Early Childhood Education, University of Illinois at Urbana-Champaign, Children's Research Center, 51 Gerty Drive, Champaign, IL 61820-7469; phone: 800-583-4135, 217-333-1386; fax: 217-333-3767 (Catalog No. 220, $10, plus $1.50 shipping in U.S.; $3 shipping outside U.S. Payment must be in U.S. funds. Make checks payable to 'University of Illinois').

Document Type: Book (010); ERIC product (071); Reports—Descriptive (141)

This book documents the work of a master preschool teacher, her co-teachers, student teachers, and very young children as they explored the automotive laboratory adjacent to their early childhood classroom at a community college. In addition to introducing the project approach, the master teacher also introduced the staff and students to documentation practices, including systematic curriculum-based assessment through the use of the Work Sampling System. The book's introduction discusses the challenges and opportunities presented by the location of the early childhood classroom in the college's Automotive Mechanics Building. The first chapter, "Planning and Anticipating the Car Project," discusses reasons for choosing cars as a project topic, the generation of a topic web, and reasons for using the project approach and the Work Sampling System. The second chapter, "Phase 1: Beginning the Project," describes the early stages of the project and individual children's experiences starting their exploration of cars. The third chapter, "Phase 2: Building the Car," describes how individual children solved the problems that arose in the course of the project, in addition to discussing various topics, including the challenges presented by the irregular attendance patterns of the children at the center, when to include teacher-initiated activities in project work, and the value of demonstrating a new activity. The fourth chapter, "Phase 3: Sharing and Celebrating Accomplishments," discusses displaying documentation as a record of the project, documenting the project in portfolios, and the final display of the car. The publication concludes with four ERIC digests: (1) "The Project Approach"; (2) "Issues in Selecting Topics for Projects"; (3) "The Contribution of Documentation to the Quality of Early Childhood Education"; and (4) "Performance Assessment in Early Childhood Education: The Work Sampling System." Includes 91 illustrations. (LPP)

Descriptors: Active Learning; *Class Activities; Classroom Techniques; Cooperative Learning; Curriculum Based Assessment; Discovery Learning; *Documentation; Experiential Learning; Integrated Curriculum; Learning Activities; Personal Narratives; *Portfolio Assessment; Preschool Curriculum; Preschool Education; Problem Solving; Student Projects; Teacher Role; Teacher Student Relationship; Teaching Methods; Young Children

Identifiers: *Project Approach (Katz and Chard); *Work Sampling System (Meisels)

ED421217 PS026639

Title: **Windows on Learning: Documenting Young Children's Work.** Early Childhood Education Series.

Author(s): Helm, Judy Harris; Beneke, Sallee; Steinheimer, Kathy

Pages: 203
Publication Date: 1998
Notes: Foreword by Lilian G. Katz.
ISBN: 0-8077-3678-3
Available from: Document Not Available from EDRS.

Availability: Teachers College Press, Teachers College, Columbia University, 1234 Amsterdam Avenue, New York, NY 10027; toll-free phone: 800-575-6566; fax: 212-678-4149; World Wide Web: http://www.tc.columbia.edu/~tcpress/ (Cloth: ISBN-0-8077-3679-1, $42; Paper: ISBN-0-8077-3678-3, $19.95).

Document Type: Book (010); Guides—Classroom—Teacher (052); Reports—Descriptive (141)

This book grew out of the experiences of three teachers as they learned to document young children's work in their respective schools. Part I of this book enables readers to learn about documentation. Chapter 1 provides the rationale for the study of documentation, and chapter 2 explains the windows framework that guided the teachers in thinking about documentation. Chapter 3 presents the web of documentation types. Chapters 4-8 provide an in-depth exploration of the variety of documentation types, with samples collected by the teachers. The children's work and teacher notes illustrate what children learned and how they developed through use of the project approach. Part II of the book explores learning how to document children's work. Chapters 9-11 explain how to collect, organize, and share documentation with children, other teachers, parents, and the community. Throughout the book and especially in chapter 10, teacher reflections illustrate how the teachers used documentation to inform teaching and to make decisions. Chapter 11 discusses how documentation as described in this book relates to recommendations and requirements for assessment. Part III of the book explores the documentation of one project, "Our Mail Project," which was completed by a class of 3- and 4-year-olds over a 6-week period. The teacher's documentation and the children's documentation show the progress of the project as it grew, expanded, and concluded. The complete documentation of this project illustrates how a project develops, how documentation can be integrated into all areas of development, how documentation informs teaching, and how documentation enables others to see how much learning took place in the classroom. (Author/LPP)

Descriptors: Active Learning; *Classroom Techniques; Cooperative Learning; Creative Development; Discovery Learning; *Documentation; *Early Childhood Education; Experiential Learning; Group Activities; Instructional Innovation; Learning Activities; Portfolios (Background Materials); Problem Solving; Reflective Teaching; Student Evaluation; *Student Projects; Teacher Effectiveness; Teacher Role; Teacher Student Relationship; Teaching Methods

Identifiers: *Project Approach (Katz and Chard); Reggio Emilia Approach; Self Reflection; Webbing (Thematic)

ED420363 PS025826
Title: **The Project Approach: Developing Curriculum with Children. Practical Guide 2.**
Author(s): Chard, Sylvia C.
Pages: 64
Publication Date: 1998
Notes: For "Practical Guide 1" of this series, see PS 025 825.
ISBN: 0-590-12853-1
Available from: Document Not Available from EDRS.

Availability: Scholastic, Inc., 555 Broadway, New York, NY 10012; phone: 212-343-6100 ($12.95).

Document Type: Guides—Classroom—Teacher (052)

This guide, a complement to "Project Approach: Developing the Basic Framework," was written to clarify particular structural features of good project work. The guide's introduction provides background information on the philosophy and methods of the Project Approach. The core of the book is divided into four parts. The first three parts each cover one of the phases of the Project Approach: getting started, fieldwork, and culminating event. Each of these parts is organized according to the five structural features of the approach (discussions, fieldwork, representation, investigation, display). Also common to all three parts is the incorporation of case study examples. The parts are: (1) "Getting Started (Phase 1)," which discusses preparation for the project and design and planning work; (2) "Developing the Project Work (Phase 2)," which discusses conducting fieldwork and implementation and development work; and (3) "Concluding the Project (Phase 3)," which discusses debriefing the learning and reviewing and sharing. The fourth part of the guide explores "Classroom Organization and Management." (EV)

Descriptors: Classroom Environment; Classroom Techniques; Curriculum Design; *Curriculum Development; Early Childhood Education; Elementary Education; Foreign Countries; *Student Centered Curriculum; *Student Projects; Teaching Guides; Teaching Methods

Identifiers: *Project Approach (Katz and Chard)

ED420362 PS025825

Title: **The Project Approach: Developing the Basic Framework. Practical Guide 1.**

Author(s): Chard, Sylvia C.

Pages: 64

Publication Date: 1998

Notes: For "Practical Guide 2" of this series, see PS 025 826.

ISBN: 0-590-12852-3

Available from: Document Not Available from EDRS.

Availability: Scholastic, Inc., 555 Broadway, New York, NY 10012; phone: 212-343-6100 ($12.95).

Document Type: Guides—Classroom—Teacher (052)

This guide is designed to offer teachers and school administrators a rationale for the Project Approach, a description of the practical implications of its implementation, and ways of integrating parts of the approach with other ways of teaching. The guide is divided into two sections. Section 1, "Reviewing Today's Classroom Practices," examines issues as they relate to children and learning. Chapter 1, "The Learner," gives an account of children's learning that can form a useful basis for planning and evaluating progress. Chapter 2, "The Instruction," presents effective teaching and classroom management techniques, and Chapter 3, "The Learning Environment," examines the teacher's role in managing an environment where a variety of different activities are in progress. Chapter 4, "The Content," offers a detailed comparison between topics and themes, units and projects, and a step-by-step approach to creating a project topic with children. Section 2 details "Understanding the Project Approach." Chapter 5, "Phases of Project Work," provides a walk-through of the three phases (getting started, fieldwork, culminating event), with an outline of what each phase has to offer and how they differ from one another. Chapter 6, "Children's Work: Processes and Products," gives a detailed description of children at work on projects. Chapter 7, "Evaluation and Assessment," makes a distinction between the kinds of learning that can be assessed in the different parts of the programs, and chapter 8, "The Roles of Teachers, Students, and Parents," looks at how parents can be better informed about their children's learning and more involved in their progress both in school and at home. (EV)

Descriptors: Classroom Environment; Classroom Techniques; Elementary Education; Foreign Countries; Learning Processes; Parent Participation; Student Evaluation; *Student Projects; Teaching Guides; Teaching Methods

Identifiers: *Project Approach (Katz and Chard)

ED420420 PS026591

Title: **Project Learning for the Multiple Intelligences Classroom. K-College.**

Author(s): Berman, Sally

Pages: 176

Publication Date: 1997

ISBN: 1-57517-077-9

Available from: EDRS Price MF01 Plus Postage. PC Not Available from EDRS.

Availability: SkyLight Training and Publishing, Inc., 2626 South Clearbrook Drive, Arlington Heights, IL 60005; toll-free phone: 800-348-4474; phone: 847-290-6600; fax: 847-290-6609 ($32.95).

Document Type: Guides—Non-classroom (055)

Based on the assumption that project learning is an effective way of actively engaging students, this guidebook contains nine projects at basic, intermediate, and advanced levels which may be adapted for use with students in classrooms fostering multiple intelligences at any grade level. The guidebook's introduction distinguishes between different types of projects—structured, topic-related, genre-related, template, and open-ended—and describes the development of a project in three levels: (1) gathering activities; (2) processing activities; and (3) applying ideas. The remainder of the guidebook is devoted to project descriptions. Each project is organized as an individual chapter and includes learning logs, an evaluation rubric, and suggestions for Internet research. Basic level projects include a social studies project focusing on a particular state; a science project involving building a bird feeder; and a language arts project in which students interview senior citizens to write a biography. Intermediate level projects are a health/language arts project regarding human anatomy; a science project in which teams design an irrigation device; and a visual/language arts project in which students create a field guide for manufactured objects. The advanced projects are a nutrition/social studies project involving a role-play focusing on diet and nutrition and their effect on health over the last 200 years; an applied technology project in which students design a better shopping cart; and a science/language arts project requiring students to master a scientific concept in order to collaborate with others to produce a children's book. A section of blackline masters listing learning strategies is included. Contains 53 references. (KB)

Descriptors: Biographies; Class Activities; *Cooperative Learning; Elementary Secondary Education; *Experiential Learning; Health Education; Internet; Language Arts; Learning Activities; *Multiple Intelligences; Science Activities; Science Instruction; Social Studies; Student Evaluation; Teaching Methods; Teamwork; Technology

Identifiers: *Project Approach (Katz and Chard); Team Learning

ED413036 PS023951

Title: **Bringing Reggio Emilia Home: An Innovative Approach to Early Childhood Education.**

Author(s): Cadwell, Louise Boyd

Pages: 160

Publication Date: 1997

Notes: Foreword by Lella Gandini.

ISBN: 0-8077-3660-00-8077-3661-9

Available from: Document Not Available from EDRS.

Availability: Teacher's College Press, 1234 Amsterdam Avenue, New York, NY 10027; phone: 800-575-6566 (Cloth: ISBN-0-8077-3661-9, $43; Paper: ISBN-0-8077-3660-0, $19.95).

Document Type: Opinion papers (120); Reports—Descriptive (141)

This book is a collection of stories describing the Reggio Emilia approach to early childhood education, based on the author's internship in the Italian preschools and a 4-year adaptation effort in one American school. The book's prologue describes the author's work before using the Reggio Emilia approach, the history of Reggio Emilia, the fundamentals of the approach, and the College School of Webster Groves, Missouri where the approach was adapted to a U.S. setting. Chapter 1, "The Journey," details the initial exposure to the Reggio approach, securing an internship, and typical days in the Diana School in Italy. Chapter 2, "The Pleasures and Power of Playing with Materials," discusses the variety of materials available to students and tells stories describing projects children use to build an expanding awareness and understanding of the natural world. Chapter 3, "The Children and the Trees," describes how Reggio Emilia educators define and develop projects, and conveys the story of the children's study of trees and plants. Chapter 4, "Returning Home to St. Louis," describes the move to St. Louis to adapt the Reggio Approach for use in the College School, the importance of spoken language and conversations with children, and the use of visual arts. Chapter 5, "Transforming Space, Time, and Relations," deals with structural and other changes in the preschool space and working with colleagues and parents. Chapter 6, "The Children and the Garden," describes a project on plants which extended from preschool through kindergarten, conversations around the project and grow table designs, children's journals, and sculptures. (Contains 46 references.) (KB)

Descriptors: Childrens Art; Childrens Writing; Classroom Design; *Early Childhood Education; Educational Environment; *Educational Innovation; Foreign Countries; Instructional Materials; Journal Writing; Language Skills; Learning Activities; Personal Narratives; Plants (Botany); Teacher Student Relationship; *Teaching Methods; Visual Arts; Young Children

Identifiers: Italy (Reggio Emilia); Project Approach (Katz and Chard); *Reggio Emilia Approach

ED402068 PS024840

Title: **The Project Approach Catalog.**

Author(s): Helm, Judy Harris, Ed.

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Urbana, IL.(BBB16656)

Pages: 90

Publication Date: November 22, 1996

Notes: Catalog prepared for "The Project Approach: An Evening of Sharing" presented at the Annual Meeting of the National Association for the Education of Young Children (Dallas, TX, November 22, 1996).

Sponsoring Agency: Office of Educational Research and Improvement (ED), Washington, DC. (EDD00036)

Contract No: RR93002007

Available from: EDRS Price MF01/PC04 Plus Postage.

Availability: ERIC Clearinghouse on Elementary and Early Childhood Education, University of Illinois at Urbana-Champaign, 805 West Pennsylvania Avenue, Urbana, IL 61801-4897; phone: 800-583-4135; fax: 217-333-3767 (Catalog No. 218, $5, plus $1.50 shipping. Charge cards accepted).

Document Type: ERIC product (071); Reference materials—Directories/Catalogs (132)

A project is an extended, in-depth investigation of a topic, ideally one worthy of children's attention and energy. This catalog, prepared for an annual meeting of the National Association for the Education of Young Children, combines articles explaining the project approach in the classroom with summaries of projects displayed at the meeting. It also contains several ERIC/EECE digests relevant to the project approach. The introductory articles cover such topics as the importance of projects, the project approach in action, documenting projects, frequently asked questions about project work, incorporating the project approach into a traditional curriculum, and results of a brainstorming session among teachers beginning project work. Projects presented at the annual meeting include those on water, rocks, houses, building construction, newspaper, and bicycles. The ERIC digests included in the catalog discuss integrating computers in the early childhood classroom, the benefits of mixed-age grouping, encouraging creativity, the contribution of documentation to the quality of early childhood education, problem solving, Reggio Emilia, and resource rooms for children. Information on a projects web site, project approach institutes, other ERIC texts on the project approach, and how to use the ERIC system is also included. (EV)

Descriptors: Active Learning; Cooperative Learning; Creative Development; Discovery Learning; Elementary Education; *Experiential Learning; Group Activities; Instructional Innovation; Learning Activities; Problem Solving; *Student Projects; Teaching Methods

Identifiers: *Project Approach (Katz and Chard); Reggio Emilia Approach

ED399066 PS024500

Title: **Children as Learners: A Developmental Approach.**

Author(s): Katz, Lilian G.

Pages: 15

Publication Date: July 1996

Notes: Keynote Address presented at the Conference on Collaborative Teaching and Learning in the Early Years Curriculum (11th, Melbourne, Victoria, Australia, July 11-13, 1996).

Available from: EDRS Price MF01/PC01 Plus Postage.

Document Type: Opinion papers (120); Speeches/meeting papers (150)

This paper outlines 22 principles of practice that serve as criteria by which to judge the developmental appropriateness of an early childhood curriculum. The principles lead to the assertion that young children as learners are greatly supported when a "project approach" is used—e.g., when their early childhood education experience includes opportunities for investigations of phenomena in their environments. Criteria of appropriateness of curricula and pedagogy are discussed, along with explanations of the developmental approach to curricula and teaching practices. The 22 principles of a project or developmental approach include: (1) taking into account those aspects of learning that change with the age and experience of the learner; (2) taking into account two equally important dimensions of development—normative and dynamic; and (3) children's dispositions to be interested, engaged, absorbed, and involved in intellectual effort are strengthened when they have ample opportunity to work on a topic or investigations over a period of time. (BGC)

Descriptors: Child Development; Cognitive Style; Cooperation; Curriculum; *Curriculum Design; *Curriculum Development; Early Childhood Education; Educational Environment; Foreign Countries; Learning Processes; Learning Strategies; *Learning Theories; *Teaching Methods

Identifiers: *Developmental Theory; Developmentally Appropriate Programs; *Project Approach (Katz and Chard)

ED394744 PS024310

Title: **Teaching Young Children about Native Americans.** ERIC Digest.

Author(s): Reese, Debbie

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Urbana, IL.(BBB16656)

Pages: 3

Publication Date: May 1996

Available from: EDRS Price MF01/PC01 Plus Postage.

Document Type: Guides—Classroom—Learner (051); ERIC product (071); ERIC digests in full text (073)

Geographic Source: U.S.; Illinois

Noting that the terms "Native American" and "American Indian" are both legitimately used to refer to the indigenous people of North America, this digest identifies stereotypes about Native Americans that children gain from media portrayals and classroom role playing, and suggests strategies for teachers to use to counter stereotyped portrayals and to reflect cultural diversity among Native Americans. Stereotypes are perpetuated by television, movies, and children's literature when these media depict Native Americans as uncivilized savages or as romanticized heroes. Many teaching materials and children's books present a generalized image of Native American people with little regard for differences among tribes. In their classrooms, teachers can use specific positive strategies to counter these stereotypes and generalized images. Suggested strategies are to: (1)

provide knowledge about contemporary Native Americans; (2) prepare units about specific tribes; (3) use books that show contemporary children of all cultures engaged in their usual daily activities; (4) obtain posters that show Native American children in contemporary contexts; (5) use dolls with different skin colors in the dramatic play area; (6) cook ethnic foods; (7) be specific about which tribes use particular items when discussing cultural artifacts; (8) critique a Thanksgiving poster depicting stereotyped pilgrim and Indian figures; and (9) at Thanksgiving, shift the focus away from reenacting the "First Thanksgiving" to items children can be thankful for in their own lives. Besides engaging in these positive practices, teachers can avoid: using over-generalized books and lesson plans; using a "tourist curriculum" that teaches predominantly through celebrations and holidays; presenting sacred activities in trivial ways; and introducing the topic of Native Americans on Columbus Day or at Thanksgiving. (BC)

Descriptors: *American Indian Culture; American Indian History; *American Indians; Books; *Childrens Literature; Classroom Techniques; Cultural Awareness; Curriculum Development; Early Childhood Education; *Learning Strategies; Preschool Curriculum; Preschool Teachers; *Stereotypes; Tribes; Young Children

Identifiers: ERIC Digests; *Native Americans; Project Approach (Katz and Chard); Thanksgiving

ED389474 PS023972

Title: **Encouraging Creativity in Early Childhood Classrooms.** ERIC Digest.

Author(s): Edwards, Carolyn Pope; Springate, Kay Wright

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Urbana, IL.(BBB16656)

Pages: 3

Publication Date: December 1995

Available from: EDRS Price MF01/PC01 Plus Postage.

Document Type: Guides—Classroom—Teacher (052); ERIC product (071); ERIC digests in full text (073)

This digest considers teacher- and child-initiated strategies for enhancing young children's self-expression and creativity. When teachers think about art and creative activities for children, it is important for them to consider that young children: (1) are developmentally capable of classroom experiences which call for (and practice) higher level thinking skills, including analysis, synthesis, and evaluation; (2) need to express ideas through different expressive avenues and symbolic media; (3) learn through meaningful activities in which different subject areas are integrated; and (4) benefit from in-depth exploration and long-term projects. Given what is known about young children's learning and their competence to express their visions of themselves, classrooms and classroom activities can be modified in several ways to support children's emerging creativity. First, class schedules should provide children with unhurried time to explore. Children should not be artificially rotated from one activity to another. Second, children's work spaces should inspire them. Children's work is fostered by a space that has natural light, harmonious colors, and comfortable work areas. Third, teachers can provide children with wonderful collections of resource materials that might be bought, found, or recycled. Fourth, the classroom atmosphere should reflect the adults' encouragement and acceptance of mistakes, risk-taking, innovation, and uniqueness, along with a certain amount of mess, noise, and freedom. In order to create such a climate, teachers must give themselves permission to try artistic activity. Finally, teachers can provide occasions for intense encounters between children and their inner or outer world. Children's best work involves such encounters. (BC)

Descriptors: Art Materials; Class Activities; Classroom Environment; Classroom Techniques; Creative Activities; *Creative Development; *Creative Expression; *Creativity; Early Childhood Education; Reggio Emilia Approach; Teacher Student Relationship; *Young Children

Identifiers: ERIC Digests; Project Approach (Katz and Chard)

ED394714 PS024166

Title: **Creating the Multi-Age Classroom: Organization, Curriculum, Instructional Strategies and Assessment for the Multi-Age Classroom Plus Considerations for Getting Started and Techniques for Classroom Management.** Revised Edition.

Author(s): Banks, Janet Caudill

Pages: 145

Publication Date: April 1995

ISBN: 1-886753-03-2

Available from: Document Not Available from EDRS.

Availability: CATS Publications, 8633 233rd Place S.W., Edmonds, WA 98026-8646 ($19.95).

Document Type: Book (010); Guides—Classroom—Teacher (052)

Intended for teachers who have asked for information on how to manage a multi-age classroom, this book outlines the ideal classroom as it exists when all of the multi-age components are put in place. Opening sections of the guide discuss creating the multi-age classroom, and the advantages and principles of multi-age instruction. The next sections provide overviews of classroom organization, instructional strategies, curriculum, assessment and evaluation, and getting started. Each of these sections includes the overview, results of the changes brought about by multi-age instruction, and advice from the experts. Additional sections address scheduling, grouping strategies, working with Bloom's taxonomy, projects for active learners, using novels for literature instruction, and helping children discover themselves and others. Separate sections address the management of mathematics, authentic assessment and evaluation, and student record forms, with sample forms included. A glossary of terms for multi-age instruction and a listing that includes references, resources, and credits conclude the book. (DR)

Descriptors: Classroom Environment; Classroom Techniques; *Curriculum; *Educational Strategies; Elementary Education; Evaluation; *Grouping (Instructional Purposes); Language Arts; Literature; *Mixed Age Grouping; Novels; *Teaching Methods; Time Factors (Learning)

Identifiers: *Authentic Assessment; Blooms Taxonomy; Project Approach (Katz and Chard)

ED375986 PS022934

Title: **Reflections on the Reggio Emilia Approach.** Perspectives from ERIC/EECE: A Monograph Series No. 6.

Author(s): Katz, Lilian G., Ed.; Cesarone, Bernard, Ed.

Author Affiliation: ERIC Clearinghouse on Elementary and Early Childhood Education, Urbana, IL.(BBB16656)

Pages: 135

Publication Date: December 1994

Available from: EDRS Price MF01/PC06 Plus Postage.

Availability: ERIC Clearinghouse on Elementary and Early Childhood Education, 805 West Pennsylvania Avenue, Urbana, IL 61801-4897 (Catalog No. 215, $10, plus $1.50 shipping and handling).

Document Type: Book (010); ERIC product (071); Reports—Descriptive (141)

This monograph consists of seven papers that discuss issues related to the teaching approach used in the preschools of Reggio Emilia, Italy. The papers are: (1) "Images from the World: Study Seminar on the Experience of the Municipal Infant-Toddler Centers and the Preprimary Schools of Reggio Emilia, Italy" (Lilian G. Katz), which identifies problems that warrant consideration by American educators trying to adapt the Reggio Emilia approach to schools in the United States; (2) "Images from the United States: Using Ideas from the Reggio Emilia Experience with American Educators" (Brenda Fyfe), which shares insights of teachers in the St. Louis, Missouri, area as they implement the Reggio Emilia approach in their classrooms; (3) "Reggio Emilia: Its Visions and Its Challenges for Educators in the United States" (Rebecca New), which notes the similarities and differences in the way teachers in Italy and the United States perform their daily work; (4) "Different Media, Different Languages" (George Forman), which explains the role of graphic "languages" in children's learning; (5) "Staff Development in Reggio Emilia" (Carlina Rinaldi), which explains the Reggio Emilia schools' unique approach to staff development; (6) "An Integrated Art Approach in a Preschool" (Giordana Rabitti), which details a case study of a children's project conducted in one of the preprimary schools in Reggio Emilia; and (7) "Promoting Collaborative Learning in the Early Childhood Classroom: Teachers' Contrasting Conceputalizations in Two Communities" (Carolyn Edwards, Lella Gandini, and John Nimmo), which examines the beliefs of teachers in Italy and the United States about their roles and about the nature of children as learners. A reference list is appended to some of the papers. The monograph also contains a bibliography of 22 items on the Reggio Emilia approach selected from the ERIC database, and a list of additional resources on the Reggio Emilia approach. (BC)

Descriptors: Annotated Bibliographies; *Art Activities; *Cultural Differences; Foreign Countries; Freehand Drawing; Infants; Preschool Children; *Preschool Education; Preschool Teachers; *Program Implementation; Staff Development; Teacher Attitudes; *Teaching Methods; Toddlers

Identifiers: Collaborative Learning; Italy; Program Adaptation; *Project Approach (Katz and Chard); *Reggio Emilia Approach; United States

ED407074 PS025116

Title: **Engaging Children's Minds: The Project Approach.**

Author(s): Katz, Lilian G.; Chard, Sylvia C.

Pages: 189

Publication Date: 1989

ISBN: 0-89391-534-3

Available from: EDRS Price MF01 Plus Postage. PC Not Available from EDRS.

Availability: Ablex Publishing Corporation, P.O. Box 5297, Greenwich, CT 06831; phone: 203-661-7602; fax: 203-661-0792 (clothbound: ISBN-0-89391-534-3, $73.25; paperback: ISBN-0-89391-543-2, $39.50. Individual orders prepaid with credit card or personal check receive 40% discount on cloth edition and 20% discount on paper edition. Add $5 shipping for cloth edition and $4 shipping for paper edition).

Document Type: Book (010); Guides—Non-classroom (055)

A project is an in-depth study of a particular topic that one or more children undertake, and consists of exploring the topic or theme such as "building a house" over a period of days or weeks. This book introduces the project approach and suggests applications and examples of this approach in action. Chapters are: (1) "Profile of the Project Approach," defining the approach and describing how project work complements other parts of the preschool curriculum; (2) "Research and Principles of Practice," discussing the conceptual basis for a project approach; (3) "Project Work in Action," illustrating the variety of project work; (4) "Features of the Project Approach," presenting guidelines for project topic selection, types of project activities, choices children make in project work, the teacher's role, and the three phases of project work; (5) "Teacher Planning," focusing on selecting a topic, making a topic web, deciding on a project's scope, and using five criteria for selecting and focusing on project topics; (6) "Getting Projects Started: Phase I," detailing ways to engage children's interest, initiate the introductory discussion, organize activities for early stages of extended projects, and involve parents; (7) "Projects in Progress: Phase II," discussing ways to maximize children's learning, interest, and motivation; (8) "Consolidating Projects: Phase III," presenting various approaches to concluding a project, such as making presentations to other classes or evaluating the project; and (9) "The Project Approach in Perspective," identifying the project approach as a complement and supplement to other aspects of the curriculum while giving teachers the opportunity to attend equally to social and intellectual development. Appendices present project descriptions, project guidelines, and a checklist for recording Missouri State Competencies applied in the course of project work. Contains about 140 references. (KDFB)

Descriptors: Active Learning; Child Development; Class Activities; Early Childhood Education; Instructional Innovation; *Learning Activities; Parent Participation; Primary Education; Student Motivation; *Student Projects; Teacher Role; Teacher Student Relationship; Teaching Methods; *Young Children

Identifiers: *Project Approach (Katz and Chard); Task Engagement

## Journal Articles

EJ590130 PS529476

Title: **All Kinds of Projects for Your Classroom.**

Author(s): Sloane, Marie W.

Source: *Young Children,* v54 n4 p17-20 Jul 1999

Publication Date: 1999

Document Type: Guides—Non-classroom (055); Journal articles (080)

Notes that projects provide opportunities to study in detail interesting subjects, and explores factors of successful project planning. Groups projects in three categories: event- or goal-oriented; child-initiated; and in-depth topic studies. Details attributes of the class, school, and teacher that determine project appropriateness. (LBT)

Descriptors: *Class Activities; *Curriculum Development; Early Childhood Education; Student Centered Curriculum

Identifiers: *Project Approach (Katz and Chard)

EJ597691 PS529819

Title: **The Pueblo Project: Authentic Indian Studies.**

Author(s): Laubenthal, Gail

Source: *Texas Child Care,* v22 n2 p24-34 Fall 1998

Publication Date: 1998

Document Type: Journal articles (080); Reports—Descriptive (141)

Illustrates the project approach by describing a classroom unit on Pueblo Indians. Discusses each phase of the project, including assessment, research, hands-on activities, and evaluation. Includes instructions for the hands-on activities used in the project, and offers strategies to guide the study of Native Americans. (TJQ)

Descriptors: Active Learning; *American Indians; Early Childhood Education; *Experiential Learning; Interdisciplinary Approach; *Learning Activities; *Pueblo (People); Teaching Methods; *Thematic Approach

Identifiers: Hands on Experience; *Project Approach (Katz and Chard)

EJ597690 PS529818

Title: **The Project Approach: A Different Way To Plan Curriculum.**

Source: *Texas Child Care,* v22 n2 p18-20 Fall 1998

Publication Date: 1998

Document Type: Journal articles (080); Reports—Descriptive (141)

Discusses the project approach in early childhood curriculum, a natural, teacher-supported companion to teacher-directed activities that develops basic skills and recognizes the child's need for hands-on experimentation to make learning meaningful. Describes the three phases of project approach: investigation, fieldwork, and display. Offers suggestions for documenting each component of the project. (TJQ)

Descriptors: *Active Learning; Early Childhood Education; *Experiential Learning; Interdisciplinary Approach; Learning Activities; *Preschool Curriculum; Student Centered Curriculum; Student Interests; *Student Projects; Teaching Methods; *Thematic Approach

Identifiers: Child Centered Education; Hands on Experience; *Project Approach (Katz and Chard)

EJ570792 PS528353

Title: **Beginning to Implement the Reggio Philosophy.**

Author(s): Staley, Lynn

Source: *Young Children*, v53 n5 p20-25 Sep 1998

Publication Date: 1998

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes implementation of the Reggio Approach in a university preschool. Summarizes the learning assumptions and teaching methods used. Examines the parent-teacher, teacher-teacher, and teacher-child partnerships; and describes and reflects on student projects related to dinosaurs, kites, castles, princes, and princesses. Discusses the impact on children's learning, topic selection, documentation, and supportive collaboration; and offers suggestions for future implementation. (KB)

Descriptors: Educational Philosophy; *Experiential Learning; Parent School Relationship; *Preschool Curriculum; Preschool Education; Program Descriptions; Program Implementation; Student Projects; Teacher Collaboration; Teacher Student Relationship; *Teaching Methods

Identifiers: Project Approach (Katz and Chard); *Reggio Emilia Approach

EJ567837 PS528009

Title: **Great Moments of Learning in Project Work.**

Author(s): Elliott, Mary Jane

Source: *Young Children*, v53 n4 p55-59 Jul 1998

Publication Date: 1998

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes six projects used in a Hong Kong kindergarten to illustrate key ingredients of the project method. Shows how a thematic approach combined with the use of projects can enable children to be self-motivated learners equipped with the skills to conduct in-depth investigations. Includes list of children's books for projects about shoes and about water. (KB)

Descriptors: Early Childhood Education; Foreign Countries; *Kindergarten; *Learning Activities; Learning Experience; Preschool Curriculum; Preschool Education; Student Motivation; *Student Projects; Young Children

Identifiers: Hong Kong; *Project Approach (Katz and Chard)

EJ567789 PS527863

Title: **Project Approach and Parent Involvement in Taiwan.**

Author(s): Liu, Karen C. Y.; Chien, Chu-Ying

Source: *Childhood Education*, v74 n4 p213-19 Sum 1998

Publication Date: 1998

Document Type: Journal articles (080); Reports—Descriptive (141)

Examines efforts by educators in Taiwan to implement the project approach in early childhood settings. Discusses observed changes and benefits of parental involvement in their children's learning; describes the activities of one project that was implemented; and outlines the strategies used by the teachers to promote parental involvement in the children's learning. (TJQ)

Descriptors: Discovery Learning; Early Childhood Education; Educational Innovation; Foreign Countries; Learning Activities; Parent Attitudes; Parent Child Relationship; *Parent Participation; Parent Role; Parent School Relationship; *Student Projects; Teacher Attitudes; Teacher Role; *Teaching Methods

Identifiers: *Project Approach (Katz and Chard); Taiwan (Taipei)

EJ567783 PS527857

Title: **Creating Contexts for Middle-Age Learning.**

Author(s): Stone, Sandra J.

Source: *Childhood Education*, v74 n4 p234-36 Sum 1998

Publication Date: 1998

Document Type: Journal articles (080)

Presents the theories of Vygotsky and Bandura that provide the foundation for research on cross-age learning in multiple-age groupings. Discusses the cognitive, social, and emotional benefits children derive from mixed-age groupings. Outlines social learning contexts, such as learning centers and projects, and structural contexts, such as multiage classrooms. (TJQ)

Descriptors: Classroom Techniques; *Cognitive Development; Cross Age Teaching; Elementary Education; *Emotional Development; Interpersonal Competence; *Learning Centers (Classroom); *Mixed Age Grouping; Peer Influence; Peer Teaching; Prosocial Behavior; *Social Development

Identifiers: Bandura (Albert); Peer Modeling; Project Approach (Katz and Chard); Vygotsky (Lev S)

EJ554424 PS527241

Title: **The Project Approach in Inclusive Preschool Classrooms.**

Author(s): Greenwald, Carol; Hand, Jennifer

Source: *Dimensions of Early Childhood*, v25 n4 p35-39 Fall 1997

Publication Date: 1997

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes a program for a project approach in inclusive classrooms which balances the needs of children with and without developmental delays and provides effective and efficient learning. Provides guidance in choosing the project topic, introducing ideas, implementing project activities, completing the project, and evaluating the experience. (SD)

Descriptors: Child Development; *Class Activities; Developmental Delays; Developmental Disabilities; Disabilities; *Inclusive Schools; Mainstreaming; Normalization (Disabilities); *Preschool Education; *Regular and Special Education Relationship; Special Education; Special Needs Students; *Student Projects

Identifiers: *Project Approach (Katz and Chard)

EJ547961 PS526717

Title: **The Fiber Project: One Teacher's Adventure toward Emergent Curriculum.**

Author(s): Booth, Cleta

Source: *Young Children*, v52 n5 p79-85 Jul 1997

Publication Date: 1997

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes a preschool classroom project intended to explore cotton and wool production. Describes the planning process, project implementation and evaluation, collaboration with other teachers, additional fiber-related center activities, and how the project provided opportunities for work in many curriculum areas. The fabric project concluded with the creation of a class quilt. (KB)

Descriptors: Class Activities; Learning Activities; *Personal Narratives; Preschool Curriculum; Preschool Education

Identifiers: Cotton Production; *Emergent Curriculum; *Project Approach (Katz and Chard); Textile Fibers; Webbing (Thematic); Wool

EJ545042 PS526618

Title: **We Think They're Learning: Beliefs, Practices, and Reflections of Two Teachers Using Project-Based Learning.**

Author(s): Lundeberg, Mary A.; And Others

Source: *Journal of Computing in Childhood Education*, v8 n1 p59-81 1997

Publication Date: 1997

Document Type: Journal articles (080); Reports—Research (143)

Examined changing beliefs, practices, and reflections of two elementary teachers who engaged students in project-based learning in a technology-rich environment. Found core beliefs related to knowledge construction: (1) strategic knowledge of how to find and organize information is important; (2) construction of projects leads to constructing and organizing knowledge; and (3) knowledge of student learning is evident from group. (DR)

Descriptors: *Computer Uses in Education; Elementary Education; *Geography Instruction; Interviews; Student Attitudes; Surveys; *Teacher Attitudes; Team Teaching; Videotape Recordings

Identifiers: Learning Environment; *Project Approach (Katz and Chard)

EJ538098 PS525986

Title: **A Multicultural Family Project for Primary.**

Author(s): Gutwirth, Valerie

Source: *Young Children*, v52 n2 p72-78 Jan 1997

Publication Date: 1997

Document Type: Journal articles (080); Reports—Descriptive (141)

Suggests that teachers can work with children's families to study likenesses and differences in their respective cultures. Details a class project for 7- to 8-year-olds whereby children start with self-portraits and construct masks of their faces. Provides sample mask project timeline and steps for making masks out of paper molds and a shredded-paper-and-glue medium. (AMC)

Descriptors: *Art Activities; Art Expression; Art Materials; *Childrens Art; Classroom Techniques; *Cultural Awareness; *Cultural Differences; Early Childhood Education; Elementary School Students; Family Characteristics; *Multicultural Education; *Parent Teacher Cooperation; Teaching Methods

Identifiers: *Family Activities; Project Approach (Katz and Chard)

EJ533095 PS525779

Title: **To Build a House: Designing Curriculum for Primary-Grade Children.**

Author(s): Harris, Teresa T.; Fuqua, J. Diane

Source: *Young Children*, v52 n1 p77-83 Nov 1996

Publication Date: 1996

Document Type: Guides—Classroom—Teacher (052); Journal articles (080)

Presents a social studies unit on house building for 5- to 7-year olds. Discusses rationale for the project approach and outlines unit components. Describes the three components of the curriculum planning strategy: (1) impression activities; (2) extension activities; and (3) expression activities. Discusses experiences during unit implementation and assessment through observation of children's behaviors and products. (KDFB)

Descriptors: Childrens Literature; Class Activities; Curriculum Development; Elementary School Curriculum; *Housing; Housing Industry; Observation; Primary Education; Program Evaluation; Self Expression; *Social Studies; Units of Study; *Young Children

Identifiers: Anecdotal Records; Project Approach (Katz and Chard); Representational Thinking; Symbolic Thinking

EJ533090 PS525774

Title: **Teaching All Children: Four Developmentally Appropriate Curricular and Instructional Strategies in Primary-Grade Classrooms.**

Author(s): Burchfield, David W.

Source: *Young Children*, v52 n1 p4-10 Nov 1996

Publication Date: 1996

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes four child-focused and child-sensitive curricular and instructional strategies to increase teachers' understanding of children and quality of teaching: (1) multiple intelligences and different ways of knowing; (2) the Project Approach; (3) the writer's workshop; and (4) balancing reading strategies and cueing systems. Discusses strengths, unique features, and application of each approach. (KDFB)

Descriptors: Classroom Techniques; *Educational Strategies; Elementary School Curriculum; Multiple Intelligences; Primary Education; Reading Instruction; *Student Centered Curriculum; Student Projects; Writing Workshops; *Young Children

Identifiers: Child Centered Education; *Developmentally Appropriate Programs; Diversity (Student); Gardner (Howard); Heterogeneous Classrooms; Project Approach (Katz and Chard)

EJ533030 PS525650

Title: **Learning about Moths.**

Author(s): Albrecht, Kay; Walsh, Katherine

Source: *Texas Child Care*, v20 n2 p32-37 Fall 1996

Publication Date: 1996

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes an early childhood classroom project involving moths that teaches children about moths' development from egg to adult stage. Includes information about the moth's enemies, care, and feeding. Outlines reading, art, music and movement, science, and math activities centering around moths. (BGC)

Descriptors: Art Activities; Class Activities; Discovery Learning; Discovery Processes; Early Childhood Education; Handicrafts; Integrated Curriculum; *Learning Activities; Mathematics Achievement; Mathematics Skills; Movement Education; Music Activities; *Outdoor Education; Puppetry; Science Activities; Sciences; Young Children

Identifiers: *Nature; Project Approach (Katz and Chard)

EJ528148 PS525237

Title: **Can We Adapt the Philosophies and Practices of Reggio Emilia, Italy, for Use in American Schools?**

Author(s): Firlik, Russell

Source: *Early Childhood Education Journal*, v23 n4 p217-20 Sum 1996

Publication Date: 1996

Document Type: Journal articles (080); Opinion papers (120)

Describes the Reggio Emilia (Italy) model for preschool education. Addresses the perceived difficulties of transferring the program to U.S. schools, focusing on differences in patterns of thinking, educational attitudes, and cultural conventions between the two cultures. Provides perspectives for change and adaptation. (SD)

Descriptors: Class Activities; *Classroom Environment; Classroom Techniques; Constructivism (Learning); *Cultural Differences; Early Childhood Education; *Educational Change; Educational Innovation; *Educational Philosophy; Foreign Countries; Learning Processes; Learning Theories; Multiple Intelligences; Nontraditional Education; Play; Student Centered Curriculum; Student Projects; *Teaching Methods; Young Children

Identifiers: Child Centered Education; Dewey (John); Gardner (Howard); Holistic Education; *Italy (Reggio Emilia); Learning Environment; Project Approach (Katz and Chard); *Reggio Emilia Approach; Social Constructivism; Social Learning Theory; Thorndike (Edward L); Whole Child Approach

EJ523472 PS524970

Title: **Lilian Katz on the Project Approach.**

Source: Scholastic Early Childhood Today, v10 n6 p20-21 Mar 1996

Publication Date: 1996

Document Type: Journal articles (080); Opinion papers (120)

Interview with Lilian Katz, one of the foremost authorities on the project approach to learning. Discusses the misconceptions and advantages of the project approach, the teacher's role in project-based work, and the qualities teachers need to insure its success. Gives historical background on the development of the approach, and some common stumbling blocks to its successful implementation. (TJQ)

Descriptors: *Active Learning; *Discovery Learning; Early Childhood Education; Educational Trends; *Experiential Learning; Interviews; *Learning Activities; *Student Projects; Teacher Role

Identifiers: *Project Approach (Katz and Chard)

EJ523471 PS524969

Title: **Learning through Projects.**

Author(s): Borgia, Eileen

Source: *Scholastic Early Childhood Today*, v10 n6 p22-29 Mar 1996

Publication Date: 1996

Document Type: Guides—Classroom—Teacher (052); Journal articles (080)

Offers guidelines for creating and implementing an age-appropriate project that fits children's needs, interests, and surroundings. Using the example of a supermarket project, outlines the four stages of a project's development—preliminary planning, getting started, investigation and discovery, and wrapping up the project. Gives tips on learning goals, topic selection, involving families, and using documentation. (TJQ)

Descriptors: *Active Learning; *Discovery Learning; Early Childhood Education; *Experiential Learning; Family Involvement; Field Trips; *Learning Activities; Parent Participation; *Student Projects

Identifiers: Age Appropriateness; *Project Approach (Katz and Chard)

EJ516731 PS524341

Title: **The Project Approach: A Museum Exhibit Created by Kindergartners.**

Author(s): Diffily, Deborah

Source: *Young Children*, v51 n2 p72-75 Jan 1996

Publication Date: 1996

Document Type: Journal articles (080); Reports—Descriptive (141)

Describes one kindergarten classroom's experience creating a rock and fossils museum exhibit and the excitement and learning that occurred when the children become directly involved in the project. Using the framework of the project approach, math, science, art, writing, and social studies content areas were involved. (ET)

Descriptors: *Class Activities; *Exhibits; *Experiential Learning; Kindergarten; Kindergarten Children; Primary Education; *Student Participation; *Student Projects; Teaching Methods

Identifiers: Dewey (John); Project Approach (Katz and Chard); Rocks

EJ505502 PS523296

Title: **Projects in the Early Years.**

130

Author(s): Hartman, Jeanette A.; Eckerty, Carolyn

Source: *Childhood Education,* v71 n3 p141-47 Spr 1995

Publication Date: 1995

Document Type: Guides—Classroom—Teacher (052); Journal articles (080)

Suggests that the growing interest in project work in early childhood education is in response to the call for developmentally appropriate practices. Defines projects and discusses the beginning of a project. Discusses the three phases of the "construction site/house project" by four- and five-year olds and provides responses to frequently asked questions about projects. (DR)

Descriptors: Class Activities; Definitions; Early Childhood Education; *Outcomes of Education; Preschool Children; *Teaching Methods

Identifiers: Developmentally Appropriate Programs; *Project Approach (Katz and Chard)

EJ503734 PS523431

Title: **Project Work with Diverse Students: Adapting Curriculum Based on the Reggio Emilia Approach.**

Author(s): Abramson, Shareen; And Others

Source: *Childhood Education,* v71 n4 p197-202 Sum 1995

Publication Date: 1995

Document Type: Journal articles (080); Reports—Descriptive (141)

Presents key features of the Reggio Emilia approach and its adaptation to early childhood curriculum in the United States. Discusses using projects as a teaching strategy for diverse students to encourage language and conceptual development. Gives prominence to visual languages. Describes project activities involving student teachers and children. (BAC)

Descriptors: *Curriculum Development; Early Childhood Education; Educational Environment; Educational Innovation; *Instructional Materials; Integrated Curriculum; Language Acquisition; Multicultural Education; *Student Projects; *Teaching Methods; Visual Arts

Identifiers: Culturally Different Students; Italy (Reggio Emilia); *Project Approach (Katz and Chard); *Reggio Emilia Approach

## How To Obtain Copies of ERIC Documents and Journal Articles

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## Recommended Books

*Chard, S. C. (1998). *The Project Approach: A practical guide 1.* New York: Scholastic.

*Chard, S. C. (1998). *The Project Approach: A practical guide 2.* New York: Scholastic.

Edwards, C., Gandini, L., & Forman, G. (1998). *The hundred languages of children* (2nd ed.). Norwood, NJ: Ablex.

*Helm, J. (Ed.). (1996). *The Project Approach catalog.* Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education.

*Helm, J. (Ed.). (1998). *The Project Approach catalog 2.* Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education.

Helm, J., Beneke, S., & Steinheimer, K. (1998). *Documenting young children's work: Windows on learning.* New York: Teachers College Press.

Helm, J., Beneke, S., & Steinheimer, K. (1998). *Teacher materials for documenting children's work.* New York: Teachers College Press.

Helm, J., & Katz, L. G. (2001). *Young investigators: The Project Approach in the early years.* New York: Teachers College Press.

Hendricks, J. (Ed.). (1996). *First steps toward teaching the Reggio way.* Upper Saddle River, NJ: Prentice Hall.

Katz, L. G. (1995). *Talks with teachers of young children: A collection.* Norwood, NJ: Ablex.

*Katz, L. G., & Chard, S. C. (2000). *Engaging children's minds: the Project Approach* (2nd ed.). Stamford, CT: Ablex.

***Recommended for beginners**

## The Language of Projects: A Glossary of Terms Used in the Project Approach

**Artifact:** object or item related to the project topic (e.g., a sling or stethoscope in a hospital project)

**Culminating Activities:** A variety of activities during phase three of a project, through which children summarize and explain their work and their findings to others.

**Dispositions:** Habits of mind that include a variety of tendencies to interpret and make sense of experience (e.g., dispositions to theorize, analyze, hypothesize, predict, persist in seeking solutions, and speculating about cause-effect relationships).

**Documentation:** Processes of record keeping and samples of children's work at different stages of completion that reveal how children worked and the learning involved in the processes.

**Expert:** In project work, an expert is anyone who has knowledge or skills related to the topic that they can share with children.

**Field Visits:** Planned visits to sites under investigation during a project.

**Interview:** Questions about the topic generated by the children are asked of an expert or visitor to the classroom.

**Observational Sketches:** Drawings and sketches made while observing actual objects or places as a means of gathering descriptive and quantitative data.

**Phase One (beginning the project):** Phase one involves topic selection, recording what is known about a topic, and generating questions for investigation.

**Phase Two (developing the project):** Phase two is the period of active investigation of the topic. This phase usually includes field site visits and interviews of experts. Children represent their understanding of the topic through art, music, play, and verbal expression.

**Phase Three (concluding the project):** In phase three, children and teachers reflect about what they learned and share the story of the project with others.

**Problem Solving:** A process employed by all people at all levels of maturity of discovering or deducing new relationships among things observed or sensed. A method involving clear definition of the problem confronted, formation of hypothetical solutions, and tests of the hypotheses, until evidence warrants acceptance of a hypothesis.

**Project:** An extended, in-depth investigation of a topic, ideally one worthy of children's attention and energy. Projects involve children in conducting research on phenomena and events worth learning about in their own environments.

**Project Display:** A shelf, table, or section of the room where objects, books, and other resources related to the project topic are made accessible for children to study.

**Project History Book:** A book that tells the story of children's in-depth exploration of the project topic. It often includes a narrative of the project, photos, children's work, and both child and teacher reflections.

**Project Night:** An evening event for parents and the community in which a school or center will exhibit documentation on a variety of topics.

**Web or Topic Web:** A graphic representation of the ideas associated with a topic.

**Webbing:** The process of discussion among teachers and children as they create a web.

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# Engaging Children's Minds: The Project Approach Summer Institute

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**Ninth Annual Summer Institute**
**at the Robert Allerton Conference Center, Monticello, Illinois**
**August 5 – 10 & 10 – 15, 2001**

Join instructors Lilian G. Katz and Sylvia C. Chard, co-authors of *Engaging Children's Minds: The Project Approach*, for seminars on implementing the Project Approach and sharing experiences with the Project Approach.

The Project Approach involves children in investigating aspects of their own environments worth learning more about. During these investigations, children apply basic literacy and numeracy skills and strengthen their social competence; they learn research skills, conduct fieldwork, and deepen their individual interest in various aspects of the topics investigated. In the Engaging Children's Minds summer institute, educators develop a thorough understanding of the Project Approach and how to apply it in the classroom. The in-depth, in-residence experience allows participants to exchange ideas with fellow educators and to interact with faculty who are readily available to answer any questions. The institute is specially designed for classroom teachers, for those responsible for early childhood preservice and inservice teacher education, and for faculty members in teacher education.

The August 5 – 10 and 10 – 15 , 2001 sessions are designed to help participants understand the three phases of the Project Approach and how to implement them in preschool and primary classrooms. Participants apply the techniques by working in teams on projects that include all the processes and procedures used by children engaged in project work. The program includes lectures, audiovisual presentations, group discussions, practical fieldwork, and classroom activities.

## Registration Information

Advance registration for the institute is required by July 20, 2001. The registration fee includes all course materials, airport shuttle to and from the conference center, all meals and refreshment breaks, and lodging for 5 nights. Participants pay for their own travel and incidental expenses. For information about registration fees and a complete program brochure and registration information: call: 217-333-2880; fax: 217-333-9561; email: engaging@c3po.conted.uiuc.edu.

## PROJECTS-L

PROJECTS-L is a Listserv discussion list for anybody interested in the use of the Project Approach in early childhood, elementary, and middle level education. For the purposes of this discussion list, the Project Approach is defined as "an in-depth study of a topic undertaken by a class, a group, or an individual child." Typically, the Project Approach refers to children's collaborative studies of "real world" topics that offer opportunities for observation and measurement of actual phenomena. The PROJECTS-L discussion list is co-owned by Sylvia Chard of the University of Alberta and Dianne Rothenberg of the ERIC Clearinghouse on Elementary and Early Childhood Education. For more information on the Project Approach, visit Sylvia Chard's Project Approach home page at:

http://www.project-approach.com/

For more information on ERIC/EECE, visit the clearinghouse's World Wide Web site at:

http://ericeece.org/

To subscribe to PROJECTS-L, all you need to do is send a one-line email message that reads:

*subscribe PROJECTS-L Firstname Lastname*

Firstname and Lastname refer to your real name (not your login name). There's no reason to include a subject or your email address. (Your message to LISTSERV should not include a "signature" if at all possible. The computer will try to interpret the lines of your signature as commands.)

Send the message to:

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After you have subscribed, please send messages to list members at

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Do not send your subscription message to the PROJECTS-L address.

You should receive a note confirming your subscription to the list within a few minutes (although sometimes it can take an hour or two).

For more information about the PROJECTS-L list, please contact:

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If you have technical questions about the PROJECTS-L list, or problems in using the list after you have subscribed, contact the list administrator at: listadmn@ericps.crc.uiuc.edu

PROJECTS-L is archived at http://ericir.syr.edu/Virtual/
(Choose "Education Listserv Archive")

ERIC

## The ERIC System

The Educational Resources Information Center (ERIC) is a national education information network designed to provide education information users with ready access to an extensive body of education-related literature. Established in 1966, ERIC is supported by the U.S. Department of Education, Office of Educational Research and Improvement (OERI).

The ERIC database is created by the 16 clearinghouses in the ERIC system. This database is the world's largest source of education information, containing more than 800,000 summaries of documents and journal articles on education research and practice. ERIC offers a document delivery service for the documents it collects and summarizes, many of which are unpublished.

The ERIC database can be used by consulting the print indexes *Resources in Education (RIE)* and *Current Index to Journals in Education (CIJE)* at more than 2,800 libraries and other locations worldwide; by using online search services (usually for a fee); by accessing ERIC at several sites on the Internet; by searching ERIC on CD-ROM at many libraries and information centers; or on the local computer systems of a growing number of universities and colleges. The database is updated monthly online and quarterly on CD-ROM. For more information on how to access the ERIC database, call ACCESS ERIC at its toll-free number, 800-LET-ERIC. ACCESS ERIC informs callers of the services and products offered by ERIC components and other education information service providers.

The ERIC system, through its 16 subject-specific clearinghouses and four support components, provides a variety of services and products than can help individuals interested in education stay up-to-date on a broad range of education-related issues. Products include research summaries, publications on topics of high interest, newsletters, and bibliographies. ERIC system services include computer search services, reference and referral services, and document reproduction. Additional information on the ERIC system, including a list of ERIC clearinghouses and the subject areas they cover, is also available from ACCESS ERIC.

## The ERIC Clearinghouse on Elementary and Early Childhood Education (ERIC/EECE)

The ERIC Clearinghouse on Elementary and Early Childhood Education (ERIC/EECE) has been located at the University of Illinois at Urbana-Champaign since 1967. The clearinghouse identifies, selects, and processes the report literature, books, and journal articles on topics related to the development, care, and education of children through early adolescence (except for specific subject areas covered by other ERIC clearinghouses) for the ERIC database.

The clearinghouse also provides other products and services, many of them at no cost. Free products include a biannual newsletter; ERIC Digests; resource lists on topics of high interest to parents, educators, policy makers, and the general public; brochures and publications lists; and ERIC system materials. Major publications and ReadySearches are available at low cost.

In response to queries from the general public, the clearinghouse provides free materials, short searches of the ERIC database, and referrals to other information sources when appropriate. Other clearinghouse services include conducting workshops and making presentations, providing camera-ready materials for conferences, and conducting extensive computer searches (for a fee) on topics related to the clearinghouse's scope of interest.

Please write or call the clearinghouse for additional information on any of these services or products, or to be placed on the clearinghouse mailing list.

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